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ABSTRACT

Designed for use by elementary and secondary teachers but useful to anyone interested in Islamic art, this booklet considers the ways in which design issues have been solved in Islamic cultures, both in the past and the present. The text covers two major areas: aspects of pattern in Islamic weaving and aspects of Islamic tilework. Under weaving the following topics are covered: prayer and pilgrimage, Islamic pattern, the Koran, the Mihrab, the Hajj, a pattern of life, woven architecture and artifacts, pattern in Islamic rugs and carpets, design, knotting, texture, color, the loom, motifs, and court carpets. Under tilework the following topics are covered: environment, geometry, color, arabesque, calligraphy, figures and animals, techniques, the Seljuks, Ottoman Turkey, Mongol Persia, and Spain and North Africa. Worksheets focus on student work with Islamic motifs and clay work. They are designed to involve the students in understanding the principles and techniques of Islamic design. Throughout the book the religious belief systems underlying design ideas are covered as well as environmental issues and lifestyles. The book concludes with a glossary, a list of additional resources, and a bibliography. (IS)

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PEOPLES PROCESSES AND PATTERNS

ISLAM

Research,text,illustrations,worksheets
and layout by

Joan Gibbons Simon Lilly Ian MacFadyen

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Peoples, Processes and Patterns

Introduction

This joint pack represents the fourth publication from the Ethnographic Resources for Art Education project in the Department of Art, Birmingham Polytechnic. Like its predecessors (Pottery Cultures; Dyed and Printed Textiles; and Playthings as Art Objects) this pack considers ways in which design issues have been both traditionally and currently resolved in other cultures. This has involved looking at design processes in action in two quite different contexts. These have been deliberately chosen to challenge our normal expectations about what design consists of. We hope that through the exploration of some aspects of Islamic and Japanese design the reader will not only consider insights provided by these examples but also be encouraged to translate some of the ideas into practical classroom activities. To this end the materials gathered together in both sections of the pack have been considered by ourselves and teachers in schools. The result has been the collection of work sheets and guidelines incorporated in each booklet. These provide practical examples of how the materials can be used in school. They are only illustrative and should be considered as initial ideas. We hope you will find other ways of tackling the topics according to your interest and circumstance. Our central objective is that the design issues are seen in the context of their creation in a particular cultural setting, which involves some appreciation of wider considerations (historical, religious, political and social). We believe that it is only by seriously studying other ways of thinking, designing, and creating that we appreciate the power and limitations of our own conceptual framework.

You will find that both parts of the pack deal with religious belief systems underlying the design activity. Environmental issues are also stressed in the Islamic section. The importance of different life styles, nomadic and settled, is allied to products associated with each: woven architecture (tents and hangings) is seen as the setting for the examination in particular of carpet design whilst the urban world is the natural context for the study of tile deisng. The concept of space is particularly stressed in the Japanese section and is seen in the context of a densely populated and highly urbanized environment. Technology is a factor which cannot be divorced from the study of design. It is perhaps interesting and instructive to note how Japanese design consciousness has had a major impact on European and North American society. The oil wealth of Saudi Arabia has provided the impetus for a revival and development of traditional design (especially in architectural restoration) as well as taking design into the age of satellite technology.

The research, the writing, the design and layout, the illustrations and the printing are all the work of the team of five research assistants who have spent some thirteen months on this collaborative project. Despite the very valuable specialist advice acknowledged in both booklets this product is experimental and not offered as a definitive answer. It is, however, put forward as an example of how artists, craftspersons, and designers can, without previous specialist knowledge, reach out and explore the experience of another culture. It is an opportunity which we are sure can be usefully grasped by teachers and pupils alike. We would appreciate your comments on the uses and limitations of this pack.

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Lucy-Ann Hunt, Dept. of Extramural Studies, Birmingham University.

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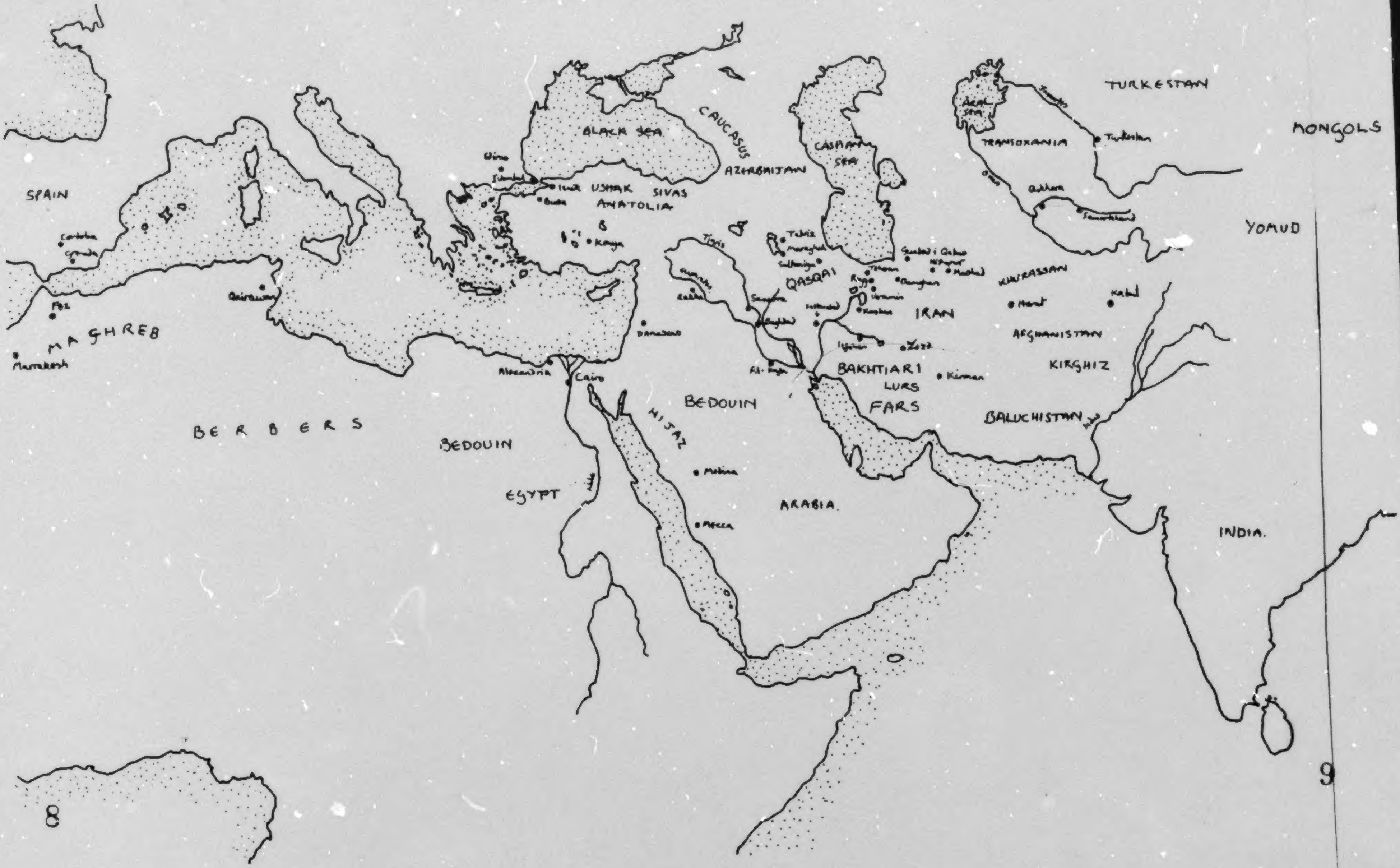
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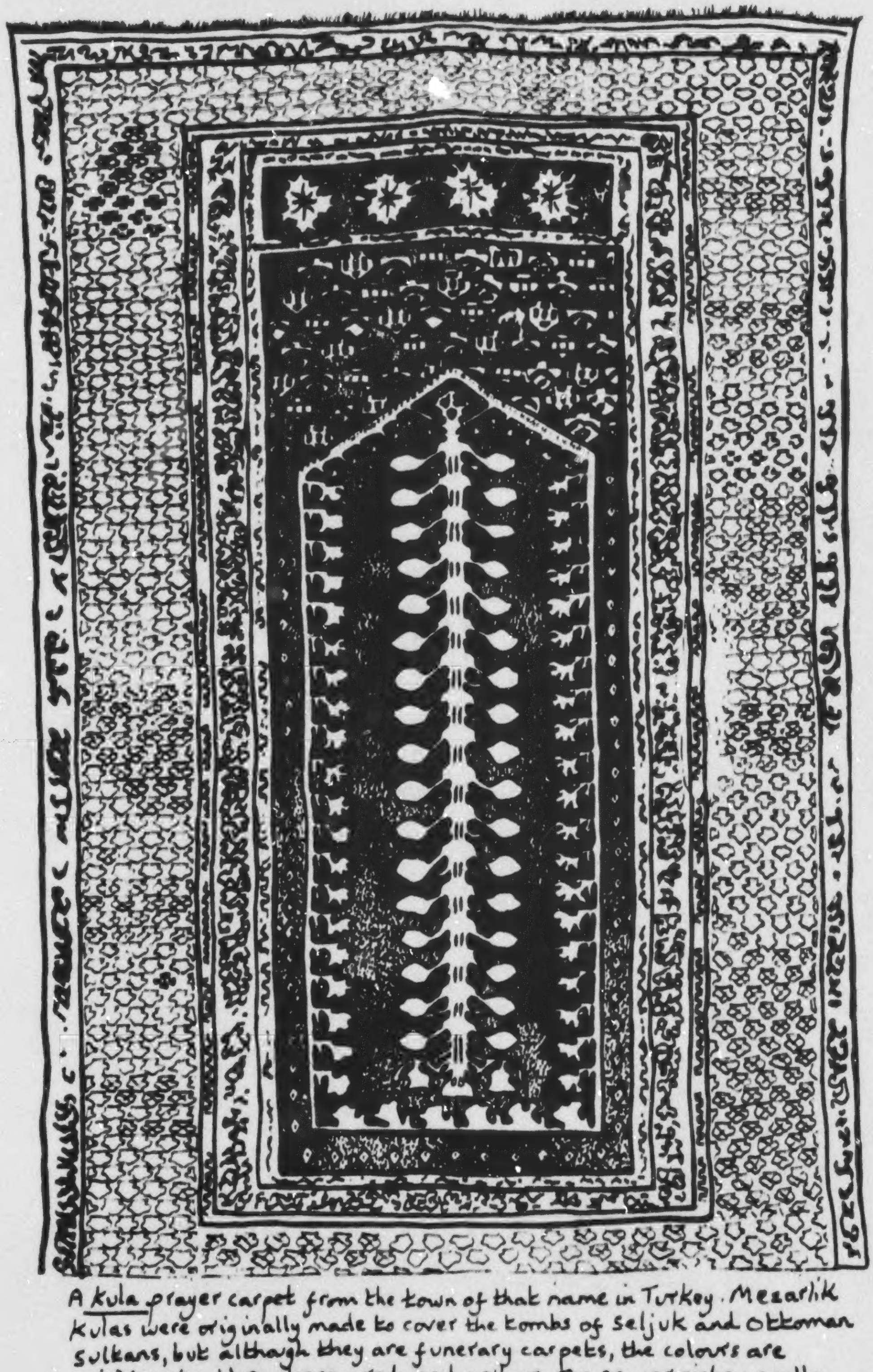
ASPECTS
OF
PATTERN
IN
ISLAMIC
WEAVING.

PATTERN, PRAYER AND PILGRIMAGE.



A *kula* prayer carpet from the town of that name in Turkey. Mezarlik Kulas were originally made to cover the tombs of Seljuk and Ottoman sultans, but although they are funerary carpets, the colours are bright: sky-blue, cherry-red, and yellow. The prayer niche usually shows rows of tombs and cypress trees, and the carpet was woven with the Arabic inscription 'Salaam Aleikum – Wa Ramatullah' ('Rest in Peace – in God's Mercy'). A break in the mihrab arch symbolizes the entrance into Paradise while the use of an odd number of borders was thought to be a protection against the Evil Eye by the weavers of Kula.

ISLAMIC PATTERN

Endlessness may be suggested in two ways by a work of art : either by an all-over field of colour,or by a grid with a sufficient number of repetitions. In Islamic pattern the parts of a design are horizontally,vertically and diagonally repeated,reflected and rotated; however,though it is absolutely regular,the system does not result in simple prediction and confirmation in reading a pattern,but rather creates a feeling of endless permutation as a number of different patterns overlap and interlock. Each carpet and tile work is discrete and may be understood conceptually, yet the visual experience of the pattern is dynamic,multiform,and ungraspable. This is the essence of Islamic design : the unified,systematic pattern contains diverse readings, and a few formal principles of design give rise to a continual fluctuation in perception and consequently create a sensation of limitless expansion. In Islam pattern of this kind transcends the aesthetic experience and becomes,in E.H.Gombrich's phrase,'a visual metaphor of value'. The unifying system,containing diversity,becomes expressive of the balance of forces which are spiritual : part/whole, stability/dynamism,completeness/endlessness. In this way quite abstract pattern may be interpreted as paradigmatic of moral and spiritual values,quite apart from the history of its use in mosque and prayer carpet. This approach is demonstrated by the mystical system of the Sufis; although many Orthodox Moslems think that Sufi philosophy is too influenced by Western thought,it does show how pattern in Islam may be treated as a visual metaphoric language,a diagrammatic language which appeals to the intellect. There is no pictorial iconography in Islam comparable to that which we find in Christian art,despite the frequent use of certain symbols and figurative devices; but pattern conveys religious feeling through formal order - balance as the basic principle of harmonious life,the human order reflecting the Divine order. Sura LV of the Koran says :

'He hath created man
He hath taught him power of expression
The sun and the moon are made punctual...

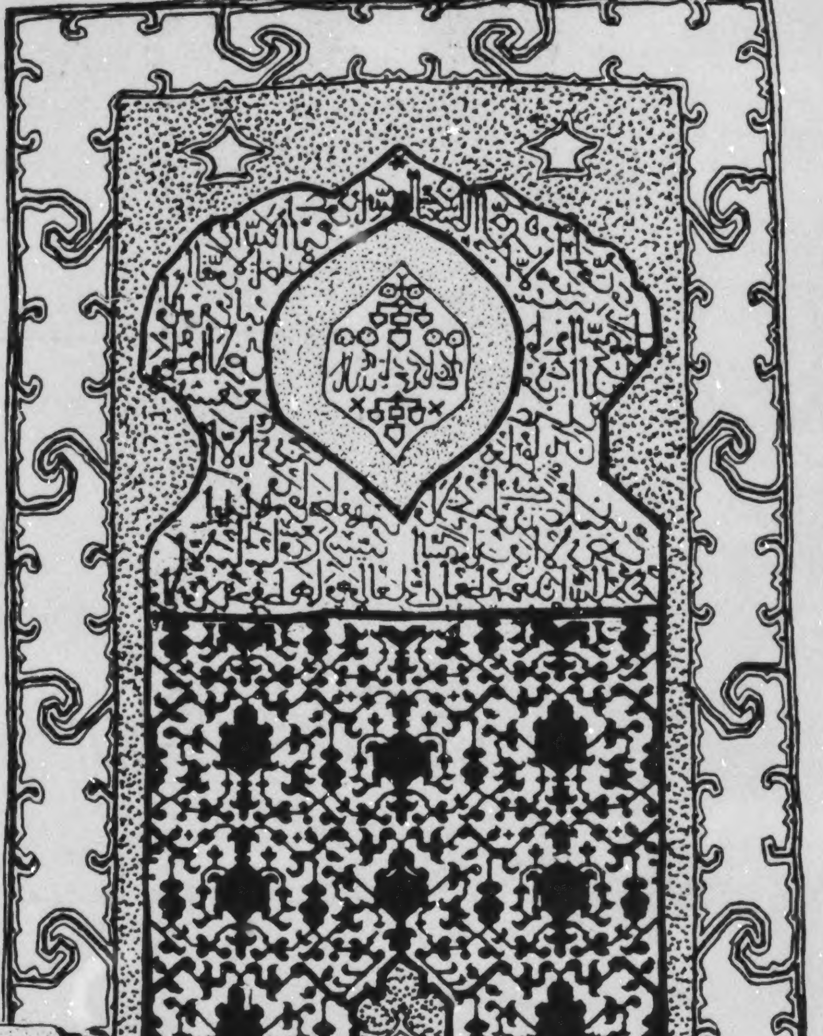
And the sky He hath uplifted;
And He hath set the balance
That ye exceed not the balance
But observe it strictly,nor fall short thereof.'

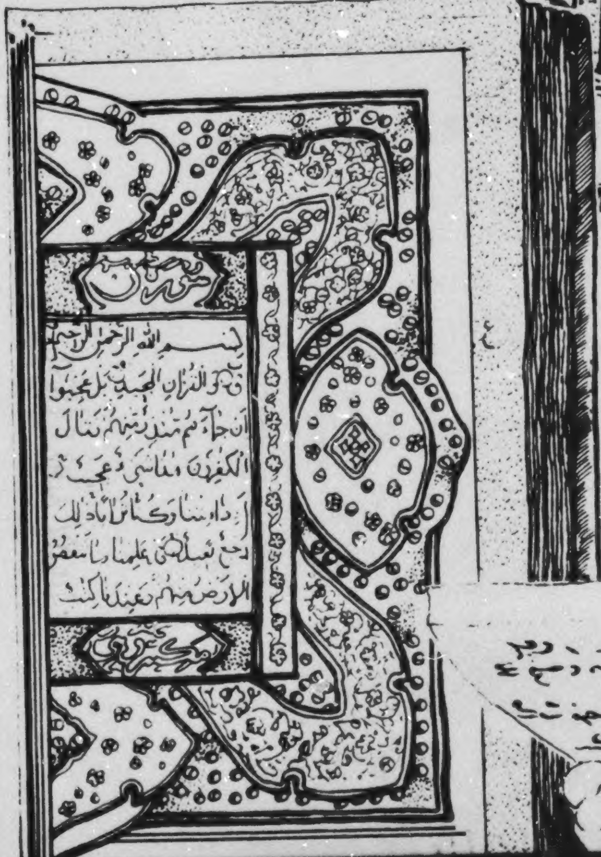
THE KORAN

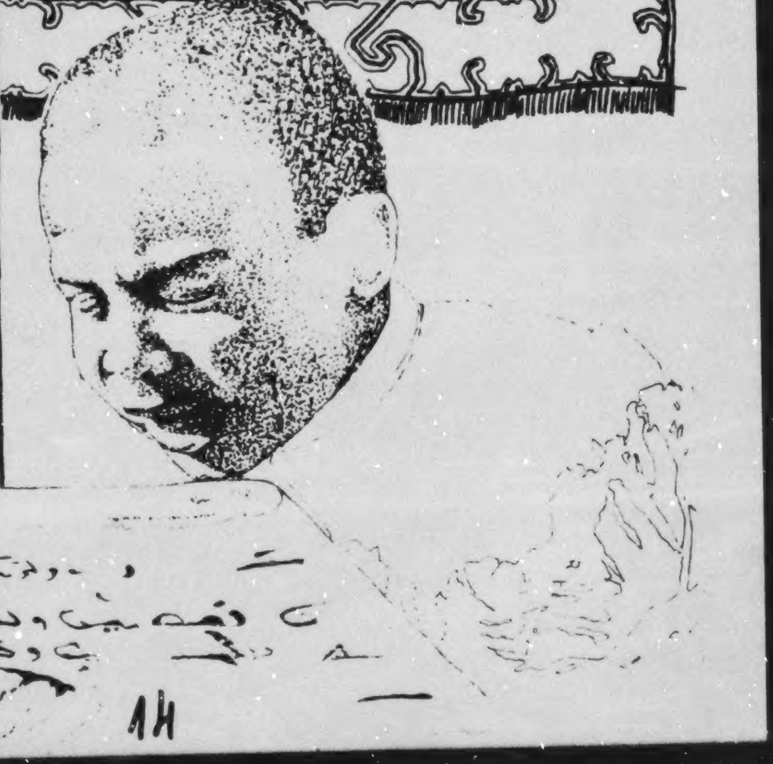
Islamic art is free of the desire to make illusionary depictions of the world. At the same time,stylized figuration and symbolic imagery express aspects of the Moslem faith and the lives of Moslems. The preference for abstract and stylized art is the result of the fear of idolatry,the worship of illusionistic,figurative images,particularly three-dimensional statuary : Mohammed himself had the idols of the Quraysh tribe at Mecca destroyed. This preference is also the consequence of the unique importance of the Koran,and hence of writing which carries the Word of God without recourse to illustrative images. Moslems are known as the 'People of the Book',and for them the Koran is literally identified with the Divinity; the Book provides the complete guide and directive for every aspect of Moslem life. Although Moslems learn the Book by heart,and it is a spoken,oral text - Koran means 'recitation' - writing preserves the text in its original,unalterable form,which has remain unchanged since it was set down by Zaid ibn Thabit under the Caliph Othman in the mid-7th century. Even those cryptic Arabic letters which head certain chapters of the Koran,whose meaning is uncertain,are preserved : 'Allah alone knows what He means by these letters.'

The Divine words of the Koran were transmitted to the Prophet Mohammed by the Archangel Gabriel and calligraphy and patterned decoration provide an appropriate setting for the Revelations : a reverent beauty. Many Moslems consider the Koran too sacred to be an object of trade,and so in a bazaar copies of the Book may be bought and sold according to the quality of design and craftsmanship of the binding decorations. But the religious and commercial aspects of life are not divided in Islam,where the Koran states that 'It shall be no offence for you to seek the bounty of your Lord by trading.' However,'the best provision is piety', and Moslems are advised : 'Believers,when you are summoned to Friday prayers,hasten to the remembrance of Allah and cease your trading.' Moslems try to lead a life in the world which is informed by Divine principles,and so is their art an expression of religious values - even when the ceramic tiles,carpets,miniature paintings,brassware and block-printed textiles of their culture are objects of commerce,to be bought and sold in the bazaar.

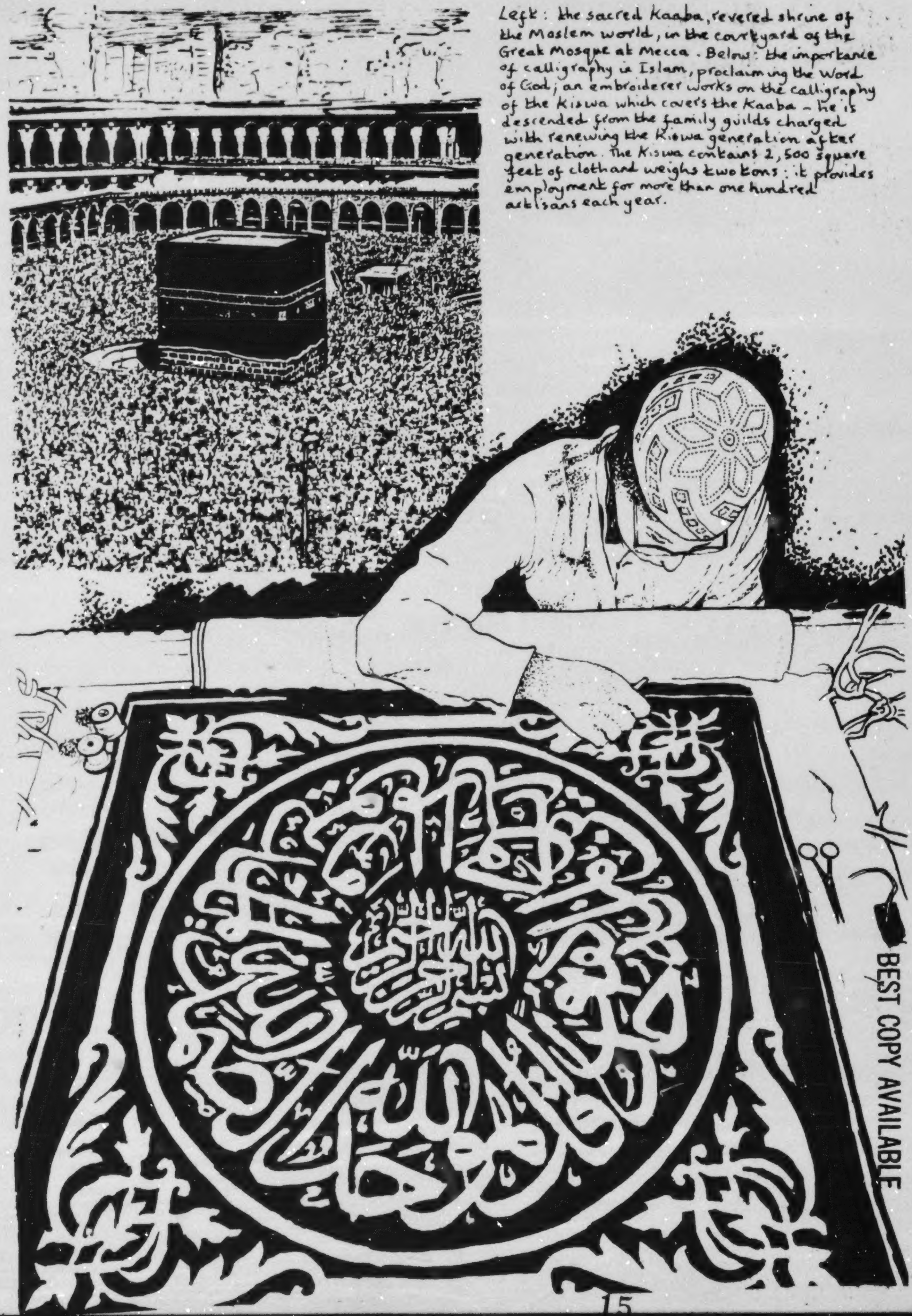
From Morocco to Afghanistan, the Koran is the complete social and spiritual guide of Moslem life, and calligraphy is an art form appropriate for carrying the Word of God. On the right: a Persian prayer carpet with calligraphic mihrab; the border and lower field decorations echo the patterned effect of the writing. Below left: an elaborately illuminated, hand-lettered Koran from Kabul in Afghanistan; the text is framed by floral and arabesque ornamentation. Below right: a young Moroccan boy learns the Suras of the Koran; this process is described by Taha Hussein in his autobiography 'An Egyptian childhood'.







Left: the sacred Kaaba, revered shrine of the Moslem world, in the courtyard of the Great Mosque at Mecca. Below: the importance of calligraphy in Islam, proclaiming the Word of God; an embroiderer works on the calligraphy of the Kiswa which covers the Kaaba – he is descended from the family guilds charged with renewing the Kiswa generation after generation. The Kiswa contains 2,500 square feet of cloth and weighs two tons: it provides employment for more than one hundred artisans each year.



THE MIHRAB

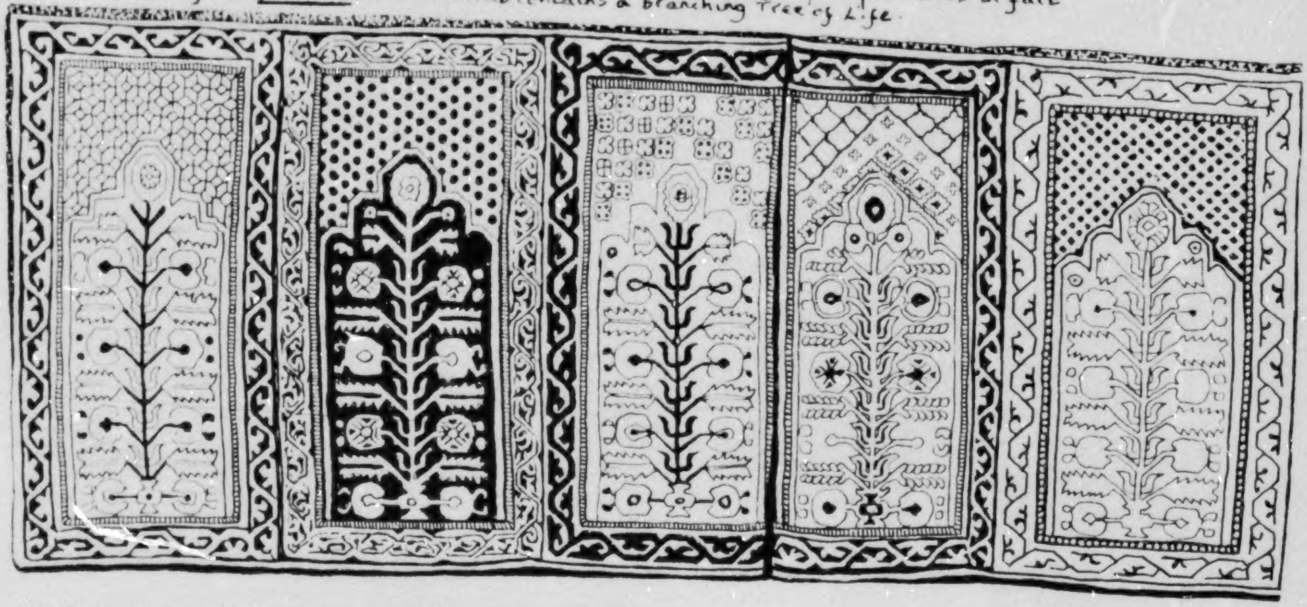
Rugs and carpets are commodities throughout the Islamic world,with an important and understood place in commerce and trade. At the same time,they possess a magic and mystery bound up with the history of nomadic life,the secrets of the dyer's art,and with the use of the carpet in meditation. More specifically,certain rugs called *mihrabs* are used in the act of prayer,and this religious significance,by association,lends all carpets a precious quality. The mihrab is the arch-shaped prayer niche in the mosque which indicates the direction of the *Kaaba*,the sacred shrine in Mecca,the Holy City. It is the arched shape of the mihrab which gives the prayer carpet its essential,characteristic design,and its name. Prayer carpets are used in the *Salat*,or Daily Prayer,which is one of the five religious duties of the Moslem faith. The Salat requires a Moslem to pray five times a day with his or her face turned towards Mecca; there the Kaaba is situated in a cloistered courtyard in the centre of the Great Mosque. The Kaaba is fifty feet high and draped in black silk,and it contains a black meteoric stone which Islam teaches was given to Abraham by Allah. The Kaaba is certainly of ancient origin and was a holy place before Mohammed preached Islam. Once, when the Kaaba had been damaged by heavy rains and the stone dislodged from its niche,the various clans of the Quraysh tribe which ruled Mecca couldn't agree upon who should replace the stone. They asked the first man to enter the temple courtyard to choose. This man was Mohammed,and he solved the problem by placing the stone in the centre of his own robe so that all the clan leaders could hold the cloth together and raise the stone to its niche. This was how Kutam became known as Mohammed,'The Praised One'. This story shows how before the foundation of the Islamic faith,Mohammed had been able to unite people in a common religious purpose; when Moslems kneel in prayer today, they too are bound together by a shared devotion.

The mihrab arch of the prayer carpet may be pointed,or rectangular,or curved,depending upon the preferred form and the method of weaving employed : the simplest horizontal loom most easily lends itself to the creation of straight-lined,stepped,rectangular arches. Whatever the design,the function is the same : unrolled so that it points,like the mihrab niche in the mosque towards Mecca,the prayer carpet symbolically relates the man or woman or child praying to the ideological and geographical heart of Islam. Wherever they may be,the Faithful turn towards the place which is the centre of their religion,and the prayer carpet enables those who are unable to visit a mosque to feel properly directed in the Salat. Communal prayer carpets contain several mihrabs,visually and practically embodying the idea of prayer as a shared experience. Mohammed himself said that prayer in a mosque is better than prayer in private,and the multiple prayer arch design - known as the 'Saph' design -symbolizes the social value of prayer : although one may pray alone,anywhere,group prayer in a particular place brings people together in a feeling of kinship and emphasises social responsibility. Some Saph carpets are family prayer rugs,and here the individual family group becomes a symbol of the great family of Moslems.

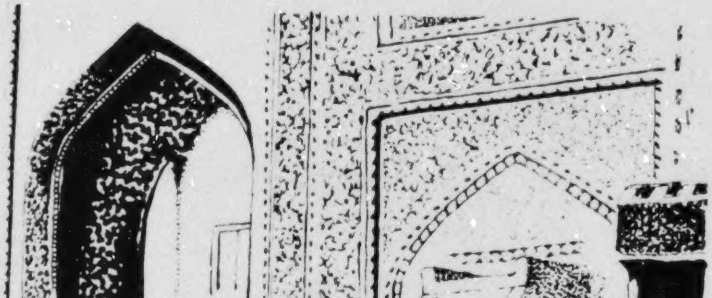
Mohammed himself did not know the prayer carpet,and the Koran doesn't include the command to say your prayers kneeling on one,but later commentaries on the Koran include instructions to kneel on something clean,and heavy enough not to be blown away by the wind when praying. Although we can't be sure when the prayer carpet was invented,we do know from Persian miniature paintings that they existed by the 15th century,and eventually became widespread,a profound image of the call to prayer. Islam might be called the religion of prayer since no other faith places such emphasis upon regular and frequent prayer. The word 'mosque' itself means 'place of kneeling',and from the minaret the muezzin has for centuries called to the Faithful :

> 'Allahu akbar,Allahu akbar...
> God is most great,God is most great...
> There is no God but Allah,
> Mohammed is his messenger...
> Come to prayer,come to prayer...'

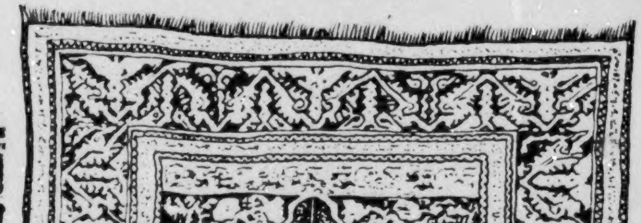
A multiple prayer carpet the rugs are joined together as those who pray together
are joined spiritually. This kind of carpet is known as the 'Saph', and was often
made of silk. Called the 'Samarkand' design, this group carpet comes in fact
from Khotan. each mihrab contains a branching Tree of Life.

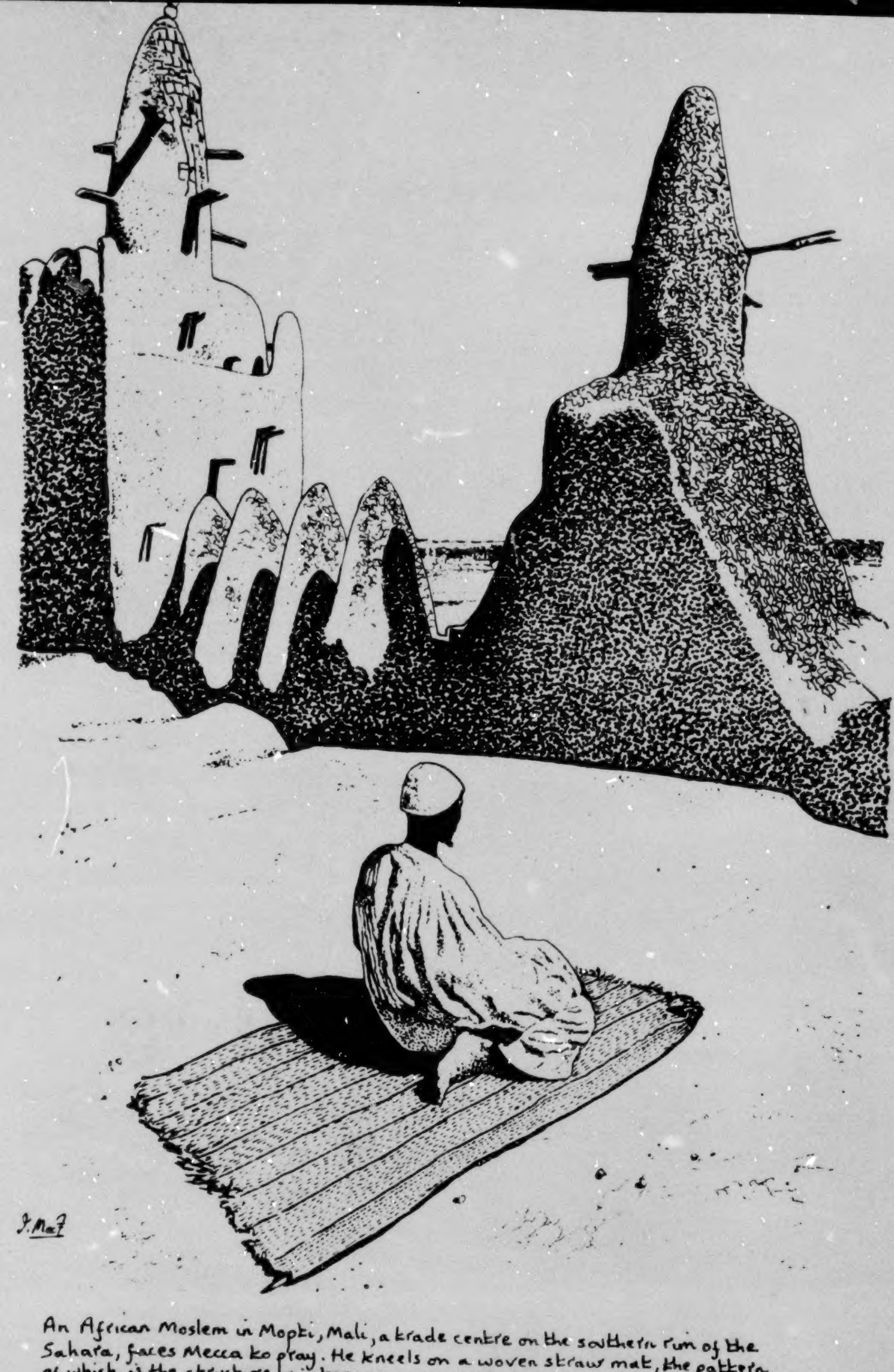


Two women talk in a mosque in Isfahan after praying. The mihrab and the minbar can be seen behind them. Patterns in the mosque change with the light and sometimes disappear in shadow: [illegible]



Ghiordes mid-18th century knotted wool prayer carpet showing two pillars and a hanging oil lamp: the architectural space of the mosque is translated into a two-dimensional formal design.





An African Moslem in Mopti, Mali, a trade centre on the southern rim of the Sahara, faces Mecca to pray. He kneels on a woven straw mat, the pattern of which is the structure of interwoven warp and weft – a reminder of the origin of woven textiles in mat and basket weaving using long thin strips of hide and bark, reeds and dried grasses. This Moslem prays on the roof top of a sun-baked mud mosque overlooking a branch of the River Niger. The people of Mali adopted the Islamic faith in the 11th century and like most Moslems – whatever their mother tongue – they learn their scripture in Arabic and this they commit to memory.

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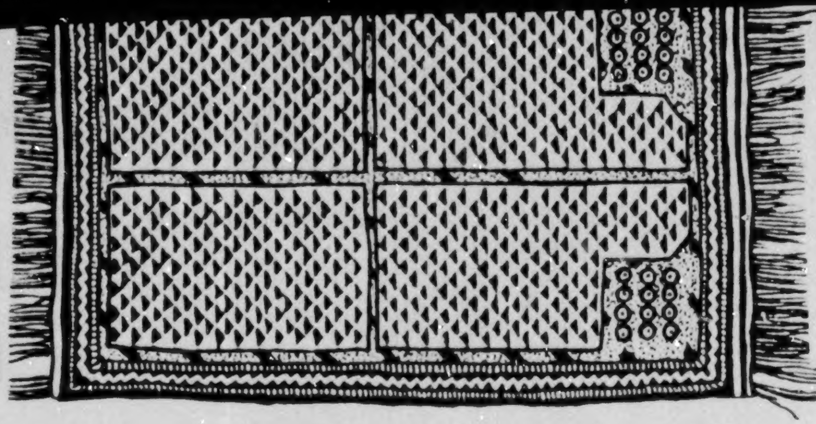
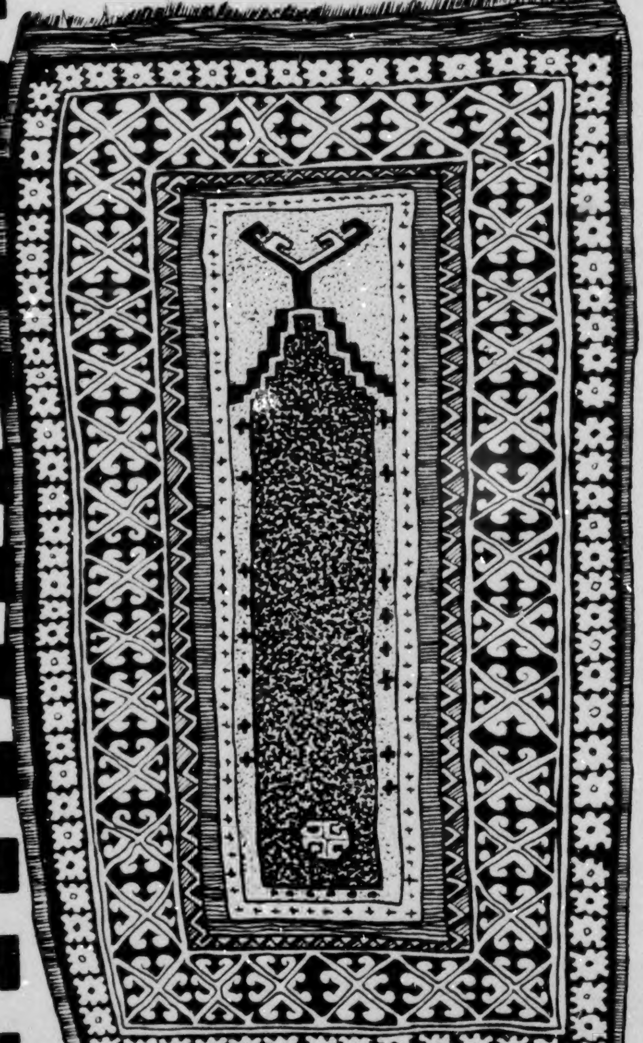
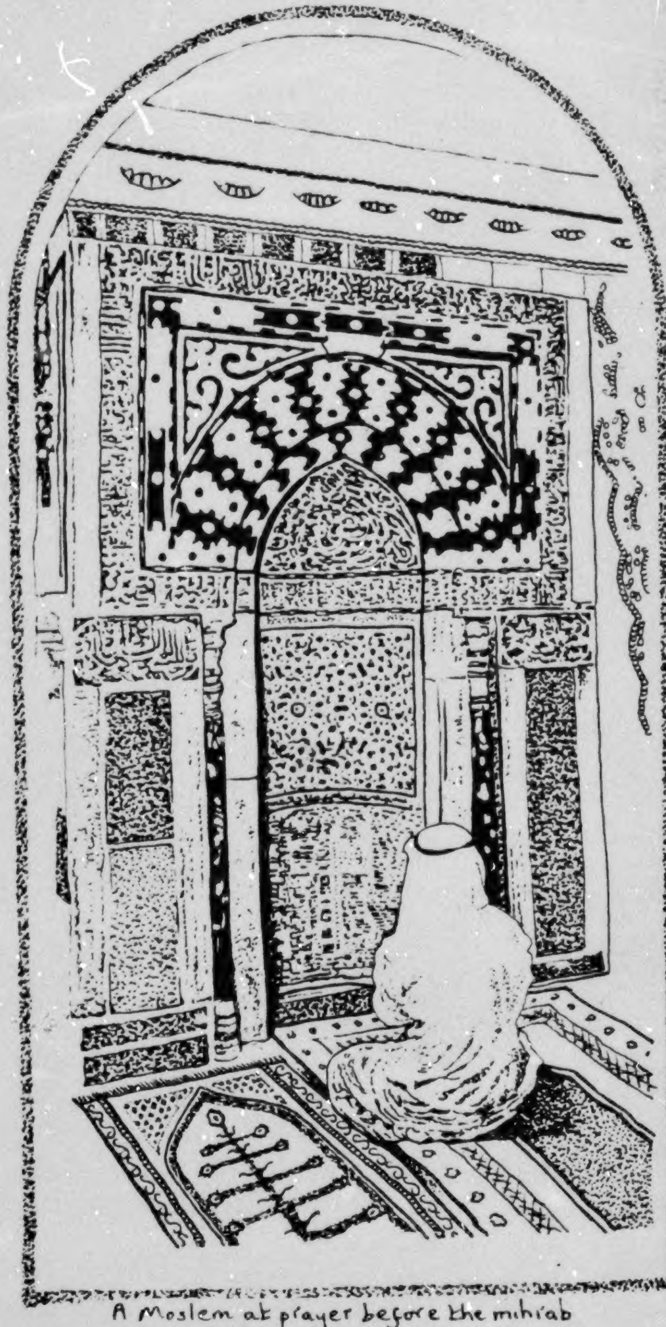


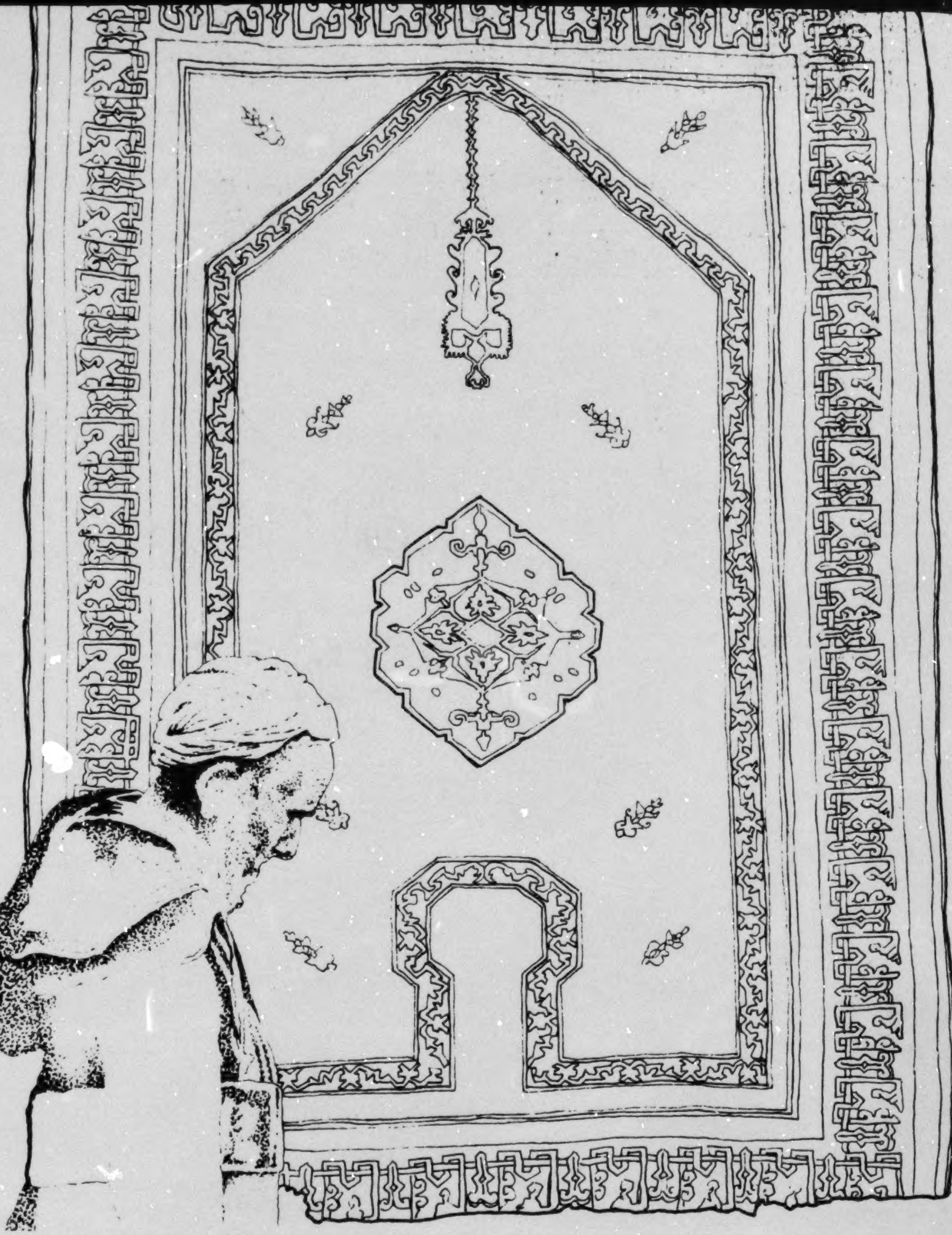
Left : a Kizilayak prayer rug from Afghanistan. The main field is divided into four parts by a cross, a design which is known as the Hatchli and which is common to tribal rugs in Iran and Afghanistan. At the same time, the patterns in the niches at the sides of the arch, and the duck-egg blue colour of the cross and inner guard make this an unusual example of the Hatchli group.

Mudjur prayer carpet, made about 1860. Mudjur is situated on the central plateau of Turkey and is noted for its prayer rugs, the borders of which are usually very wide and which feature rhombus, star, Greek key and zig-zag patterns. The cottage industry of Mudjur produced versions of sophisticated court designs such as Ottoman in response to market demand.

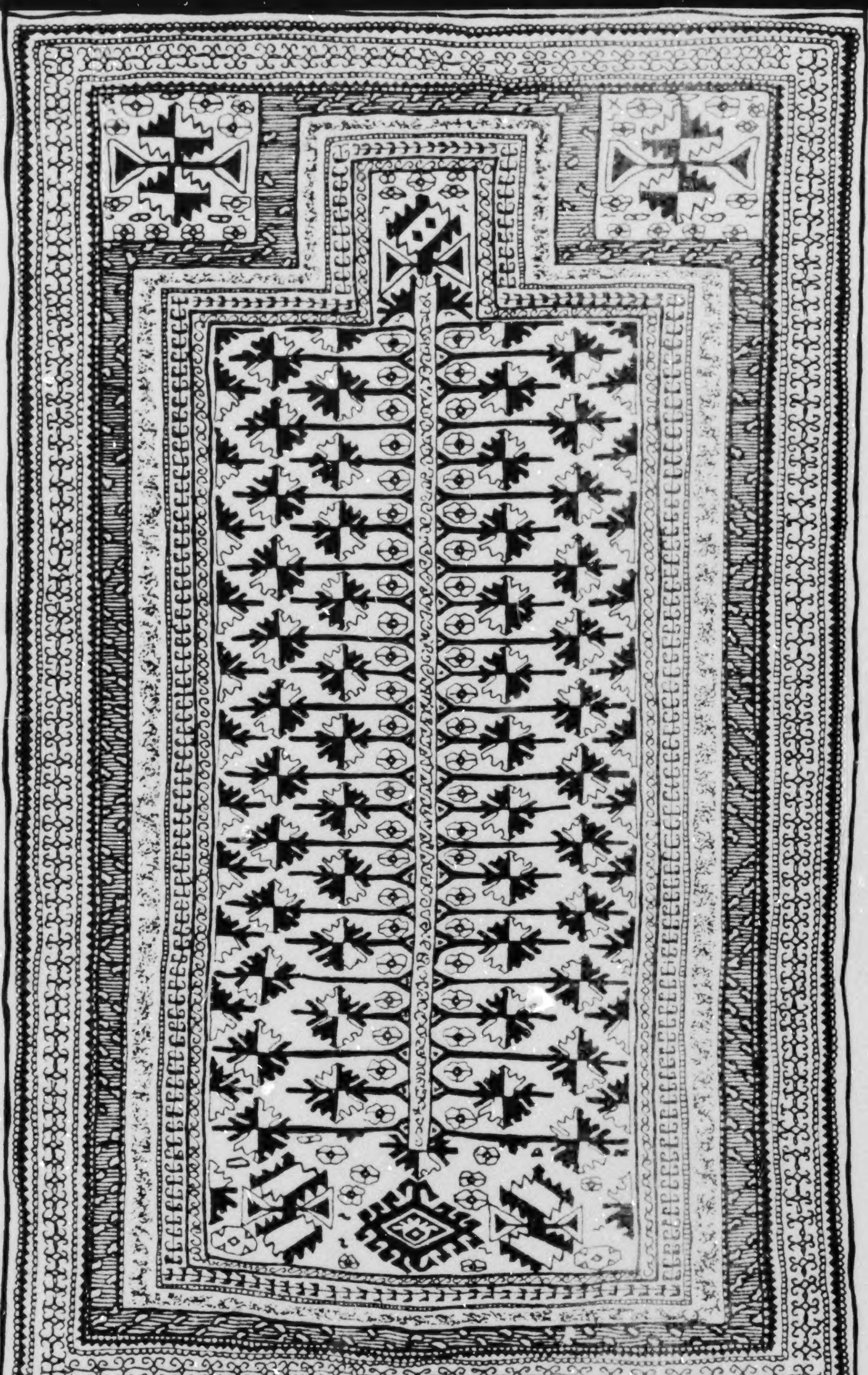




A Moslem at prayer before the mihrab niche in a mosque : he kneels upon a carpet which reflects this essential shape. The architectural mihrab shown here was once used by the Prophet Mohammed himself for his daily obsequies.



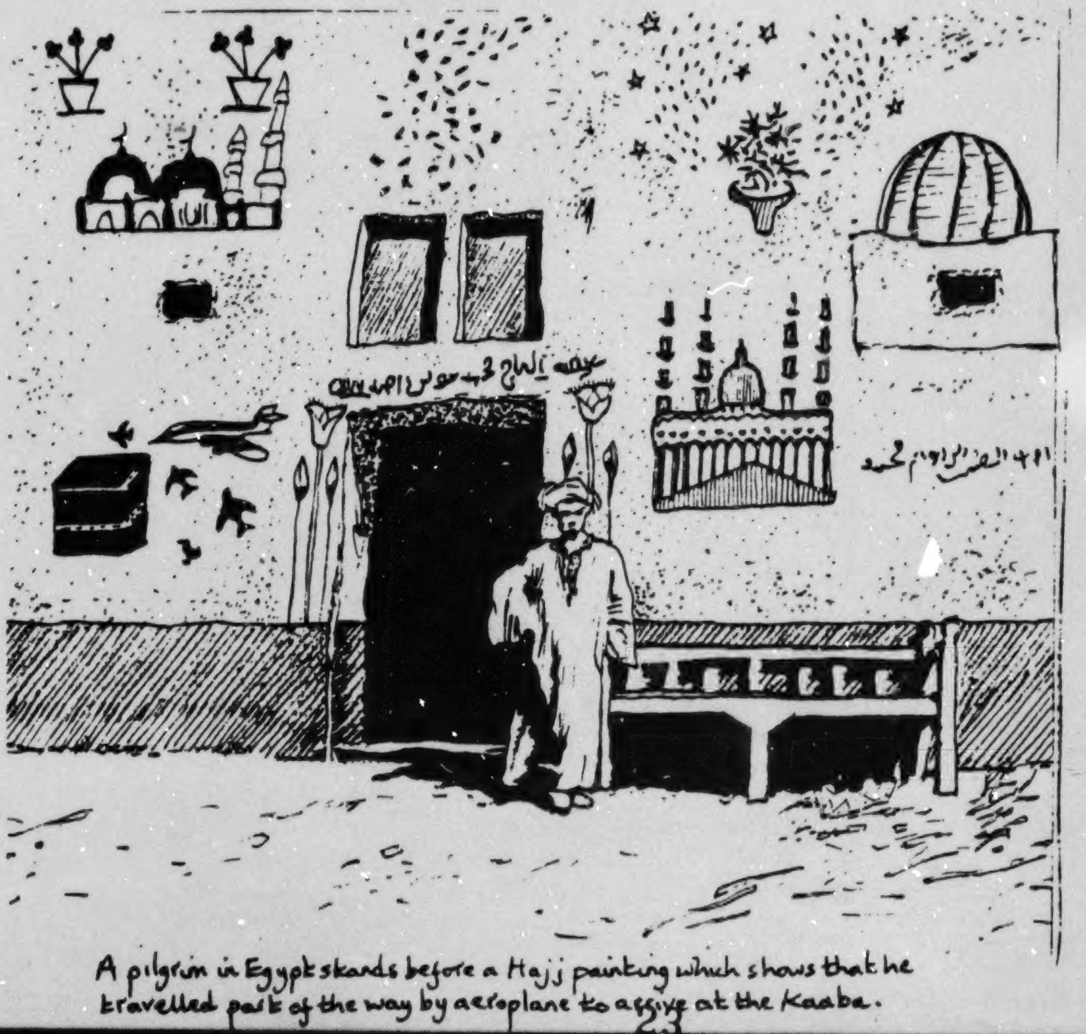
Late 15th/early 16th century prayer rug from Anatolia. The decorative medallion in the centre of the rug refers to the late 7th century mihrab in the cave beneath the Dome of the Rock in Jerusalem: this mihrab has an eight-petalled rosette in the centre. The lower niche in the carpet above may be a niche within a niche, or a basin for ritual ablution before prayer, or a water channel, or a stylized mountain derived from Chinese dragon robes which symbolizes the worshipper standing upon elevated ground. The hanging oil lamp refers to the actual lamp in the mosque and reminds one of this passage from the Koran: 'Allah is the light of the heavens and the earth. His light may be compared to a niche that enshrines a lamp, the lamp within a crystal of star-like brilliance, light upon light. In temples which Allah has sanctioned to be built for the remembrance of his name do men praise him, men whom neither trade nor profit can divert from remembering him?'[1]



A Baluchi Tree of Life prayer rug with Baluchi tribal guls in the spandrels of the geometric mihrab. The gul is a sign of tribal identity, and part of this Baluchi gul is used for the flowers on the tree branches, so that the tree stands for the tribal group with the branches representing its generations. This conceptual design is the origin of the 'family tree' diagram used in the Western world. Like the multiple prayer carpet, this tribal Tree of Life, in the context of the mihrab, relates the social group to the great family of Moslems

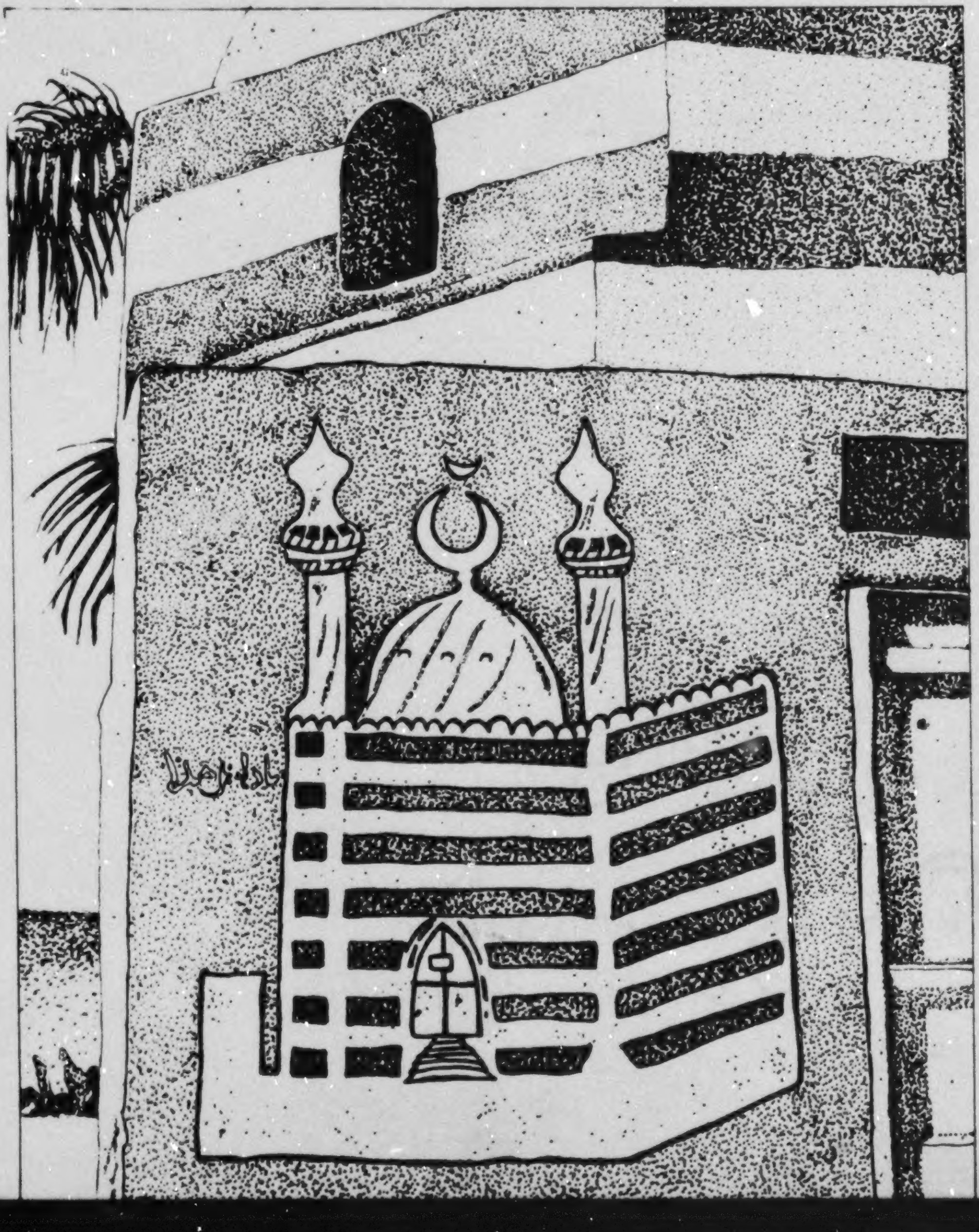
THE HAJJ

Another duty of the Moslem faith is the Hajj, the Pilgrimage to Mecca which all who are physically and financially able are urged to make at least once in a lifetime. The mihrab design and the patterns it has given rise to are intrinsically bound up with the act of prayer; and the Pilgrimage too has lead to symbolic artistic expression. The journey to the Kaaba is one which many pilgrims are only able to make once in their lives and its significance is captured in the popular art of decorating returning pilgrims' houses. Moslem orthodoxy expects the pilgrim's return to be solemn and without ostentation, but if these murals are bright and exuberant they are also a reverent acknowledgement of the great importance of the Hajj. The entrance of the house is cleaned and whitewashed and then painted with designs by the house painter or by a professional sign painter. Alternately, stencils may be bought in the bazaar which provide the necessary shapes for the murals. The designs include stylized trees and floral



A pilgrim in Egypt stands before a Hajj painting which shows that he travelled part of the way by aeroplane to arrive at the Kaaba.

garlands with flowers in vases and pots; many of these have five branches, five leaves, or five flowers which refer to the five religious duties of the faith. These floral designs are surrounded by abstract patterns : swarms of dots and dashes and stars which are reminiscent of fireworks. As well as painted leaves and flowers, the doorways have freshly cut branches and bouquets of flowers around them. Other motifs are more specifically religious : the Khamsa, the outspread hand with its five fingers representing the five duties is also known as the Hand of Fatima, referring to the Prophet's daughter, and is often drawn with an eye in its open palm as a protection against the Evil Eye - a fetishism found throughout the Middle East, derived from an ancient belief which pre-dates Islam. The dominating motif is the Dome of

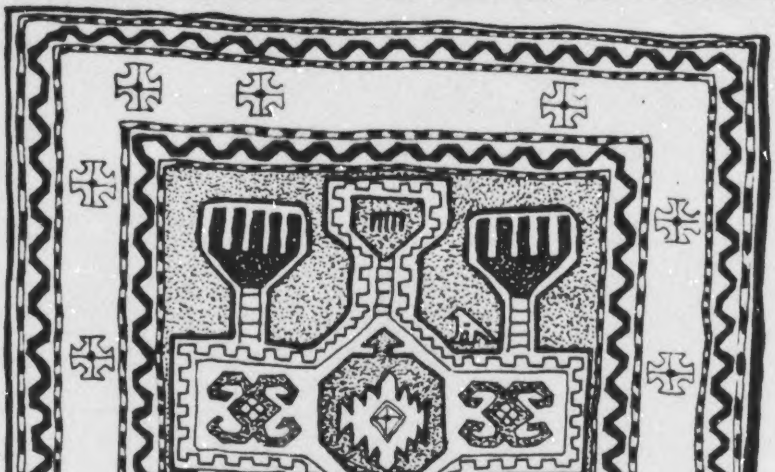


A mosque painted on the wall of a tomb in Upper Egypt : the image shows that the deceased made the Pilgrimage to Mecca. Although there is an attempt to portray the building in depth, perspective is secondary to the essential shape of the mosque and to the horizontal and slanted patterns which fill it. The work is an aesthetic expression, but its function is clear: homage to the dead.

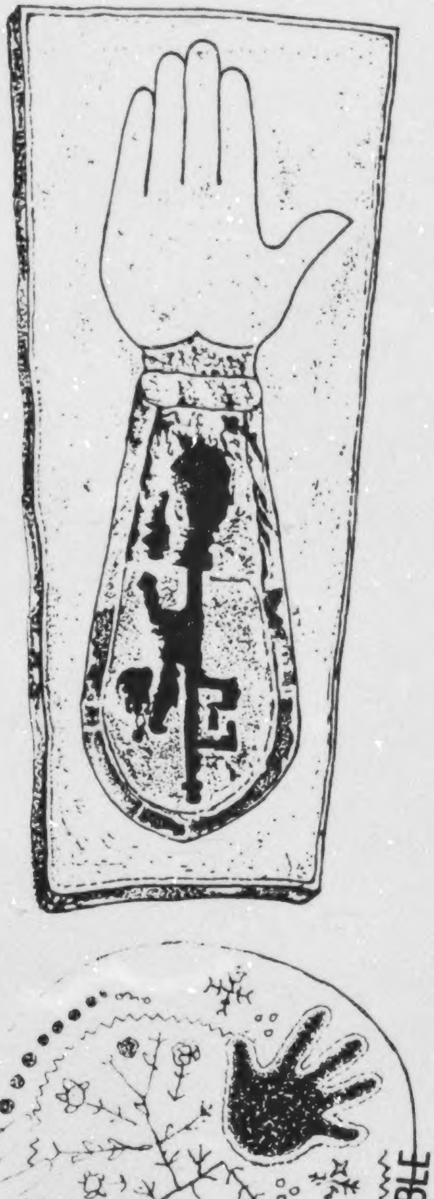
Some pictorial rugs feature a mosque in the central field, and pilgrims to Mecca may buy rugs which represent the Great Mosque.

the Rock,signifying that the pilgrim has come full circle and completed the last stage of the Pilgrimage,the return to the ancient and revered Dome of the Rock in Jerusalem. Around the representations of the Dome,the Kaaba,and the Great Mosque the patterns are made with free,bold paint strokes which lack the usual order and regularity of design which is typical of Islam,but which have rhythmical,dynamic force. In addition to the above,there are calligraphic inscriptions from the Suras of the Koran. The interior of the house is decorated as well,with paper flowers,calligraphic wall-hangings and tiny lights.

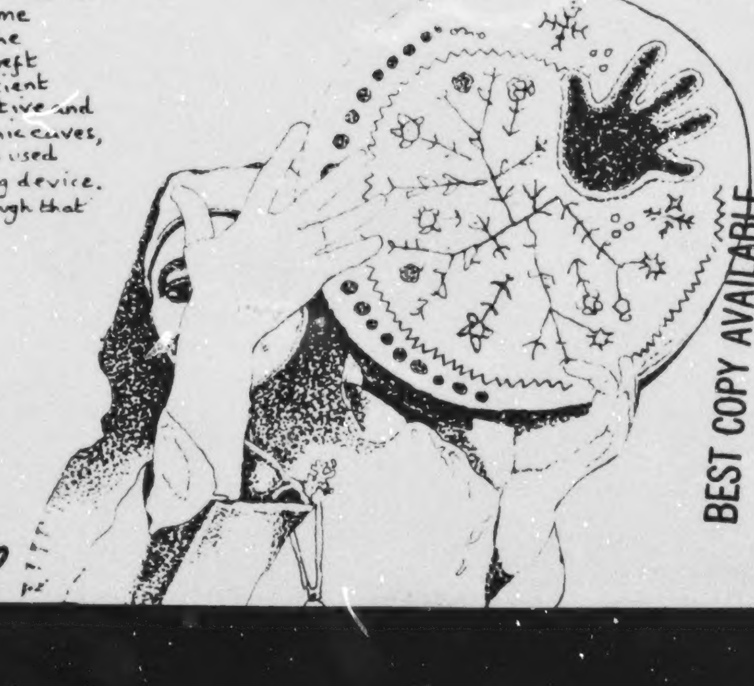
This art of the Hajj is found in Cairo,Jerusalem and Damascus,as well as in other localities. We can't be sure when the custom began,although early 19th century reports exist. But it is clearly a spontaneous and often 'non-professional' form of popular art. The motifs and patterns both testify to the sanctity of the house's inhabitants,and in their bright colours - yellow-orange,green and black with blues and reds dominating - express festive joy. The house decorations are made for a special occasion,but permanent doorway and window designs in Islam include flowering vases, fretted arches,flower-patterned frames and the carved or painted Khamsa. The relation between the vertical wall and the carpet on the floor is embodied in the prayer rug with its niche design; similarly,designs which emerged from woven textiles are translated into the applied ornamentation of the house,showing peoples' desire for patterning of the environment,both interior and exterior. Rectangular and arched doorways and windows provide a format for pattern work which recalls the essential system of the carpet with its central inner field enclosed by frames and borders. Certainly a common vocabulary of motifs is drawn upon,and these function within designs made in different media,linking the weaver,the carpenter,and the painter. Just as the carpet is an object of fascination which one may meditate upon,so have gates and arches and doorways had a wide-ranging significance in the East since earliest times : Babylon means 'Gate of the Gods', and the mihrab suggests the gateway to Paradise as well as being the threshold of infinite wisdom in Sufi mysticism. A doorway which is decorated shows that its symbolic meaning is understood : here pattern simultaneously confers and reveals significance.



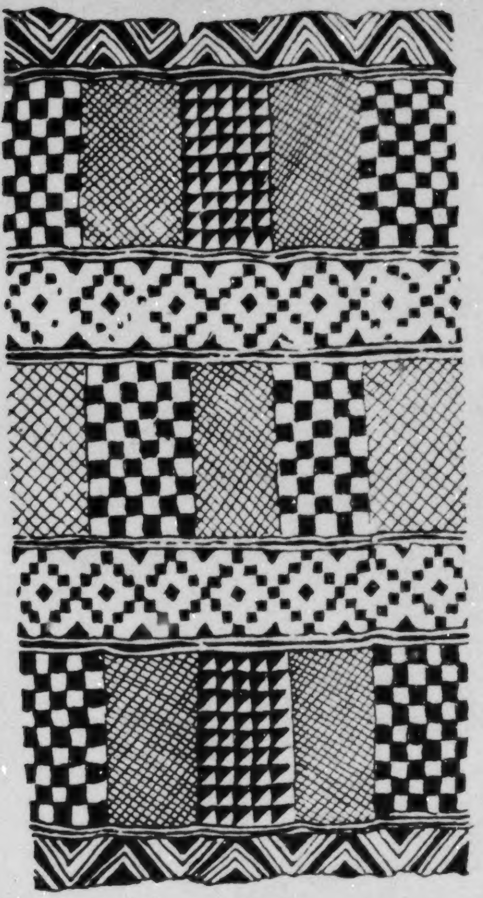
Below: a keystone from the Gate of Justice, the main entrance to the Alhambra, Granada. This Khamsa open hand with its five fingers symbolizes the five religious duties of the Moslem faith. These duties are known as the Five Pillars of Islam.



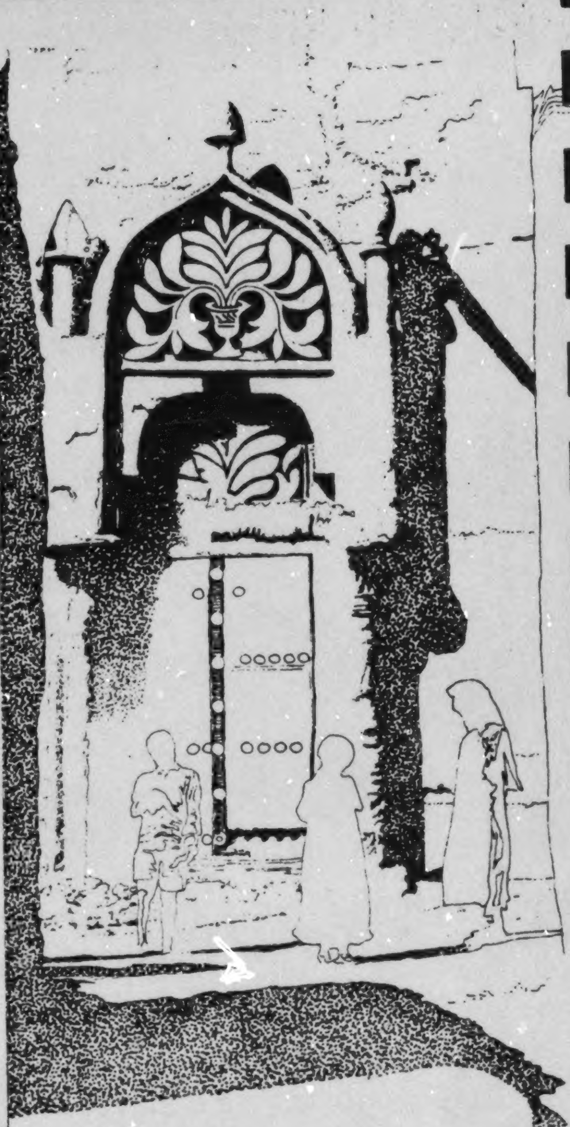
Tribal prayer rugs from the Caucasus and Turkey often feature stylized hands on each side of the prayer arch, sometimes accompanied by the five-toothed comb as here – the comb carries the same meaning as well as referring to the weaver's comb, used to pull the weft threads tight. The hand is an ancient pictorial device, found in the positive and negative handprints of Paleolithic caves, but in Islam we can see how it is used as a culturally specific signifying device. This example is a Gendje rug although that town is now known as Kirovabad.



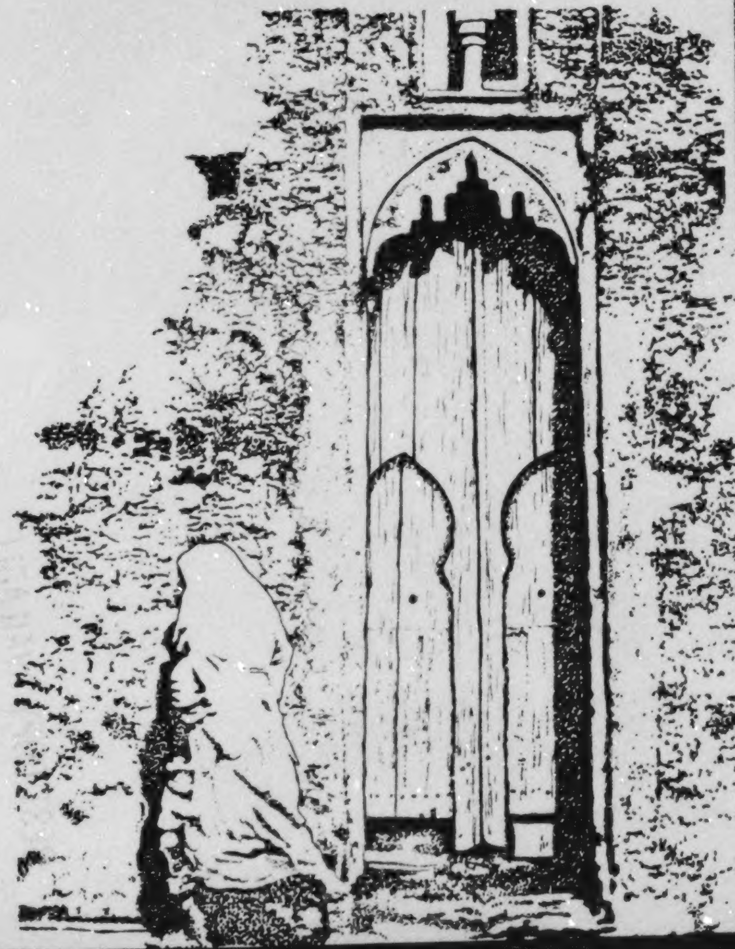
A girl celebrates the birthday of the Prophet in Ouzad, Morocco. She sings to the accompaniment of the bendir, a snare drum: here it is decorated with a branching flower pattern and with the powerful image of the open hand.



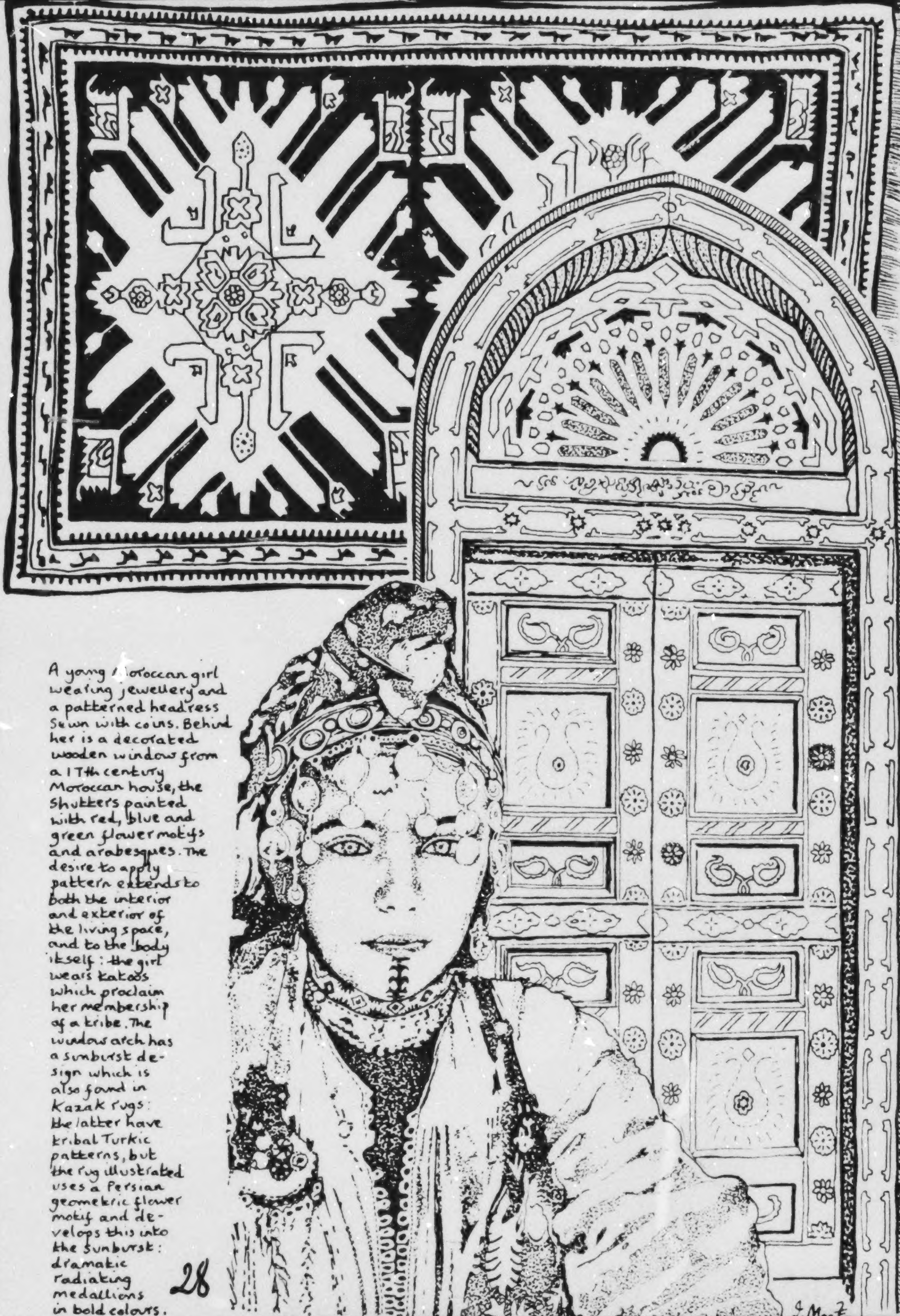
Chequer-board, criss-cross, zig-zag and stepped diamond designs painted on a wooden door in Libya: these applied patterns were derived from woven textiles.



Doorway in Dubai, decorated with flowering vase pattern: architecture and textiles share the same symbolic images. The doorway itself is a profound symbol. An inscription on the Ardebil carpet reads: 'I have no other refuge than thy threshold, my head has no other shelter than thy doorway.' This refers to the doorway of the Mosque of Ardebil, and to the entrance to Paradise.

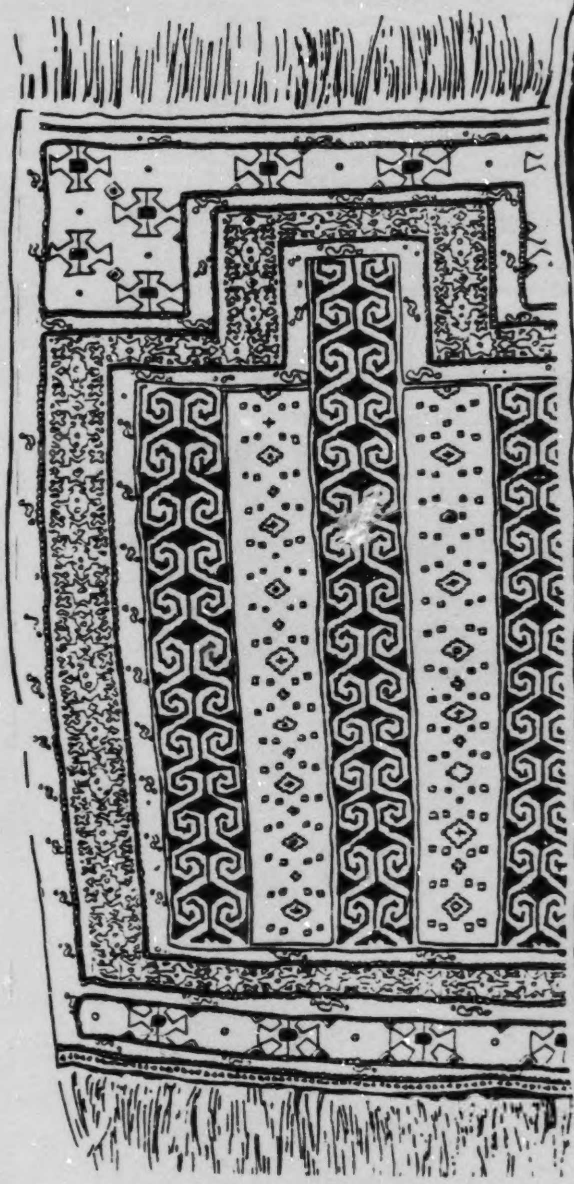


Arched doorway, Tangier. An old wooden door set in worn stone but the arched panels and simple fretted design give the work symbolic power and aesthetic appeal.

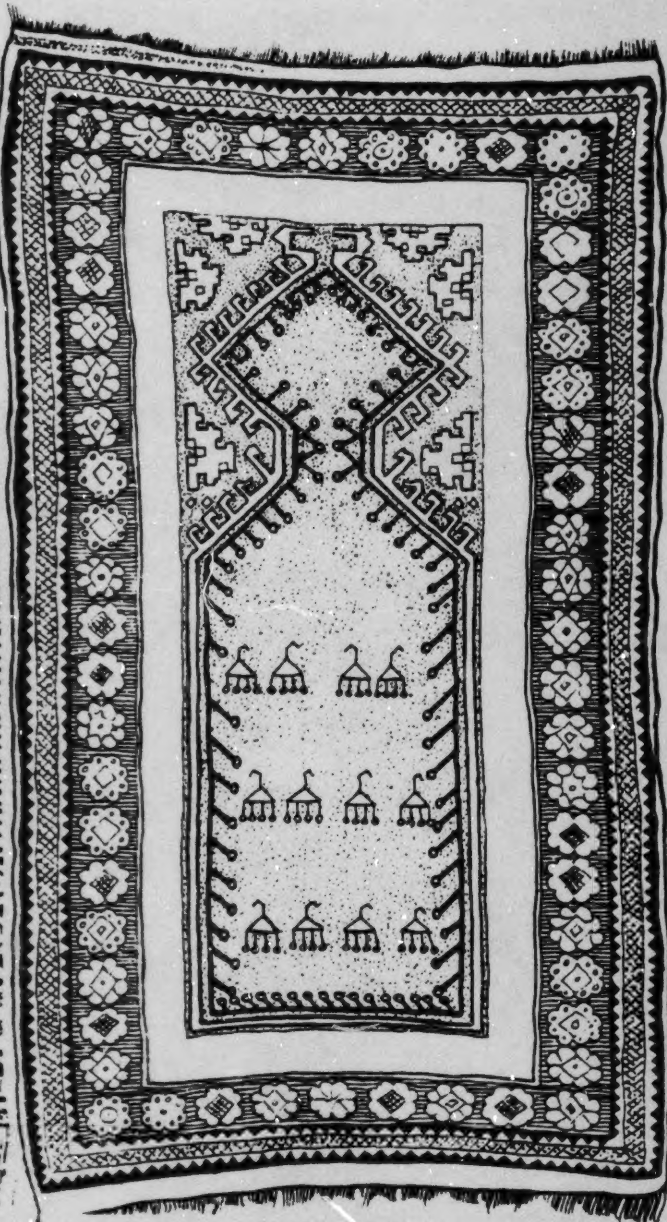


A young Moroccan girl wearing jewellery and a patterned headress sewn with coins. Behind her is a decorated wooden window from a 17th century Moroccan house, the shutters painted with red, blue and green flower motifs and arabesques. The desire to apply pattern extends to both the interior and exterior of the living space, and to the body itself: the girl wears tatoos which proclaim her membership of a tribe. The window arch has a sunburst design which is also found in Kazak rugs: the latter have tribal Turkic patterns, but the rug illustrated uses a Persian geometric flower motif and develops this into the sunburst: dramatic radiating medallions in bold colours.

'Lord God,from such a distant land I have come unto Thee...grant me shelter under Thy throne.' This devotion is repeated by the pilgrim in Arabic as he or she circles the Kaaba seven times,a circumambulation which,along with the kissing of the Black Stone,is part of the umra ritual. This ritual is in a sense an addition to those actions required by religious law,but it is a significant addition which demonstrates the therapeutic power of ritual on a large scale. The inclusion of the umra in the Hajj was an innovation brought about by Mohammed himself who combined the Meccan spring feast with the originally autumnul Hajj. Mohammed had dreamed of creating a single great religious brotherhood,and the value of ritual as demonstrable social discipline and order must have been apparent to him. Drinking water from the Well of Zemzem,making the ritual course between the hillocks of Shafa and Marwa,wearing the white garb symbolizing the state of ihram,and the 'standing' or mass assembly on Mount Arafat - these actions have been followed for hundreds of years by millions of Moslems and together they constitute a model for imitation,a pattern for human behaviour. Similarly,when the imam leads the Faithful in prayer in the mosque,there is a pattern to be followed. The Prayer of Assembly begins with the people standing erect with their hands together. After several movements they all kneel down and bow their heads to the floor. The whole action is known as the rakah,or 'bowing down' and at the Friday Prayer of Assembly,Moslems do two rakah. In carrying out a prescribed sequence of physical movements or following a specific geographical course,the Moslem at prayer or making the Hajj is submitting to the performance of a set pattern which stretches back into the past and forward into the future. Islam means 'submission to God' and the value of the fixed pattern of prayer and Pilgrimage is that it provides the necessary physical conditions for this submission to be demonstrated. The established forms of behaviour in Islam also link Moslems of many countries : the ritual triumphs over language and geographical boundaries and among the two million and more who make the Hajj each year there are Moslems from Central Africa and Bangladesh and Burma who follow the required actions. As well as the Salat and the Hajj,there are three further religious duties in Islam,and together these are known as the Five Pillars of Islam. The Shahabad is the recitation of the Creed in public : 'There is no God but Allah and Mohammed is his messenger.' The Zakat is almsgiving to the poor. The Fast of Ramadan is the fast during the ninth month of the Moslem calendar which extends between sunrise and sunset. The Five Pillars are so called because they support the Moslem faith and they do this by requiring strict formal observance : they constitute the religious system to which all Believers must submit.

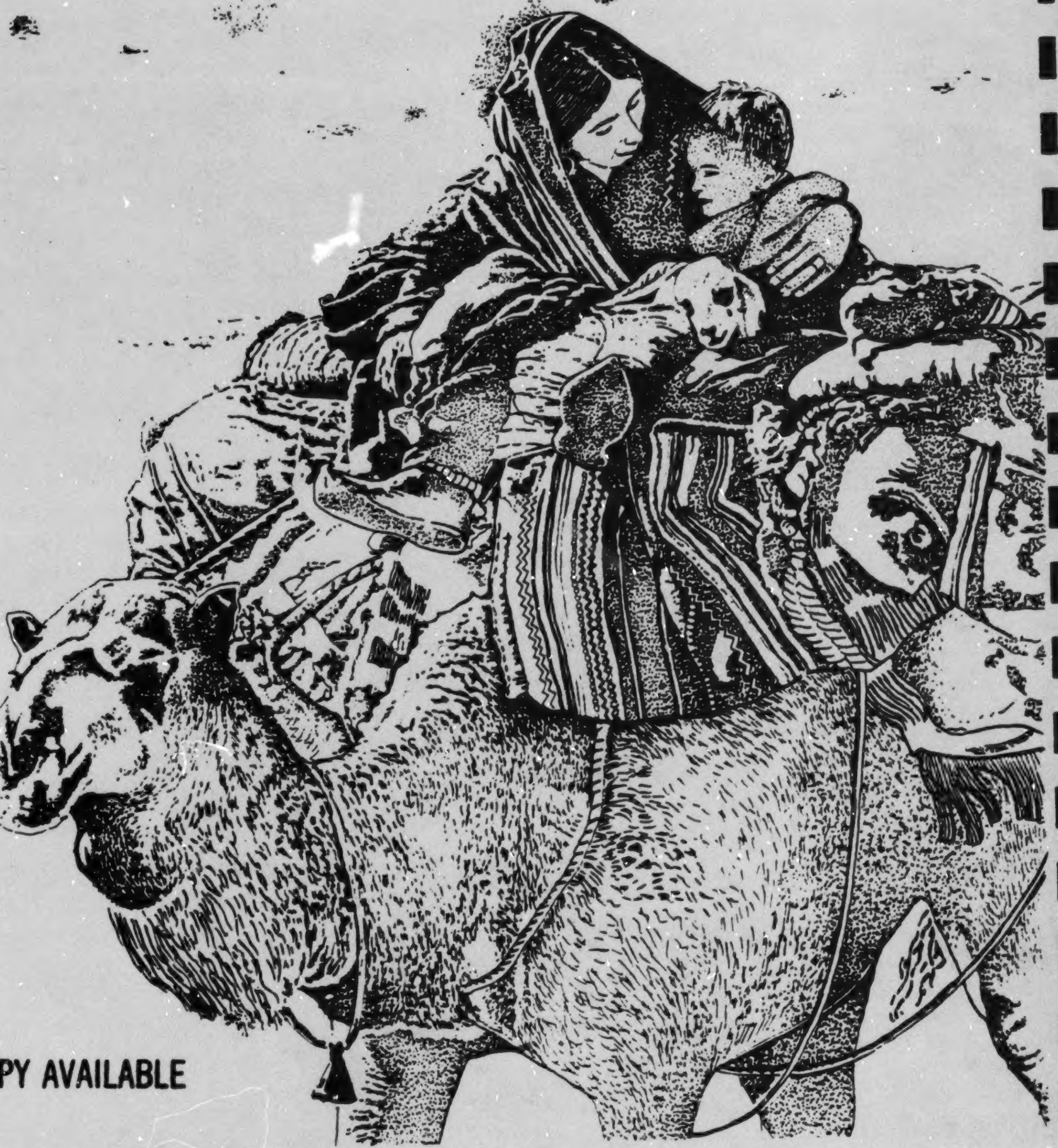


Yamout Bokhara prayer rug : there are many kinds of Bokhara weave common to Northern Iran and Afghanistan. Some tribal rugs have a very small prayer arch, making their nature as mihrabs difficult to identify. But this rug is bold and geometrically clear in design.



Milas prayer rug from south-west Turkey, on the shores of the Aegean Sea, about 1860. Milas mihrabs often have a diamond-shaped arch with a geometric branching design inside the arch and the central field. The colours are bright and stylized animals and flower motifs feature in the central field and around the borders.

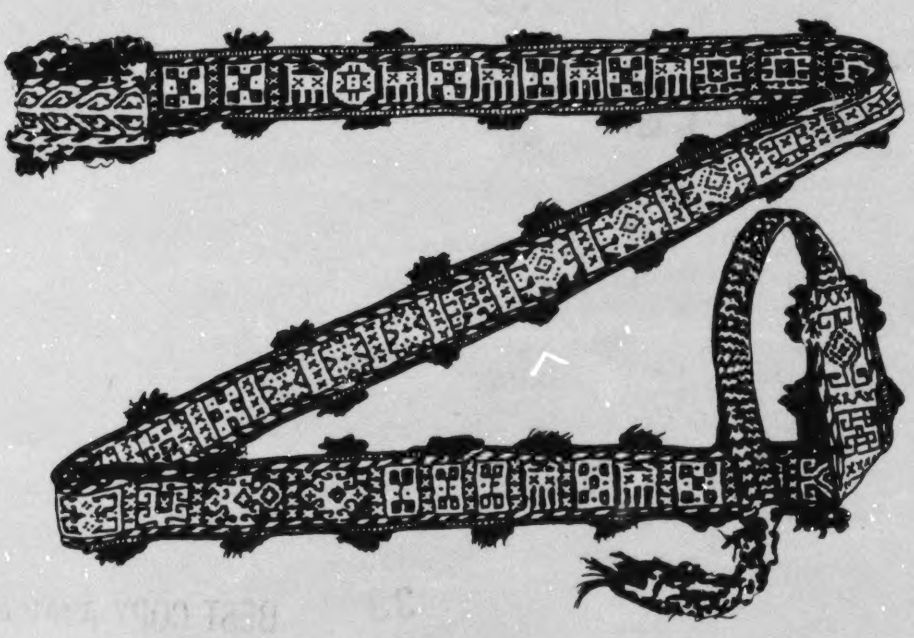
WOVEN ARCHITECTURE AND ARTIFACTS.



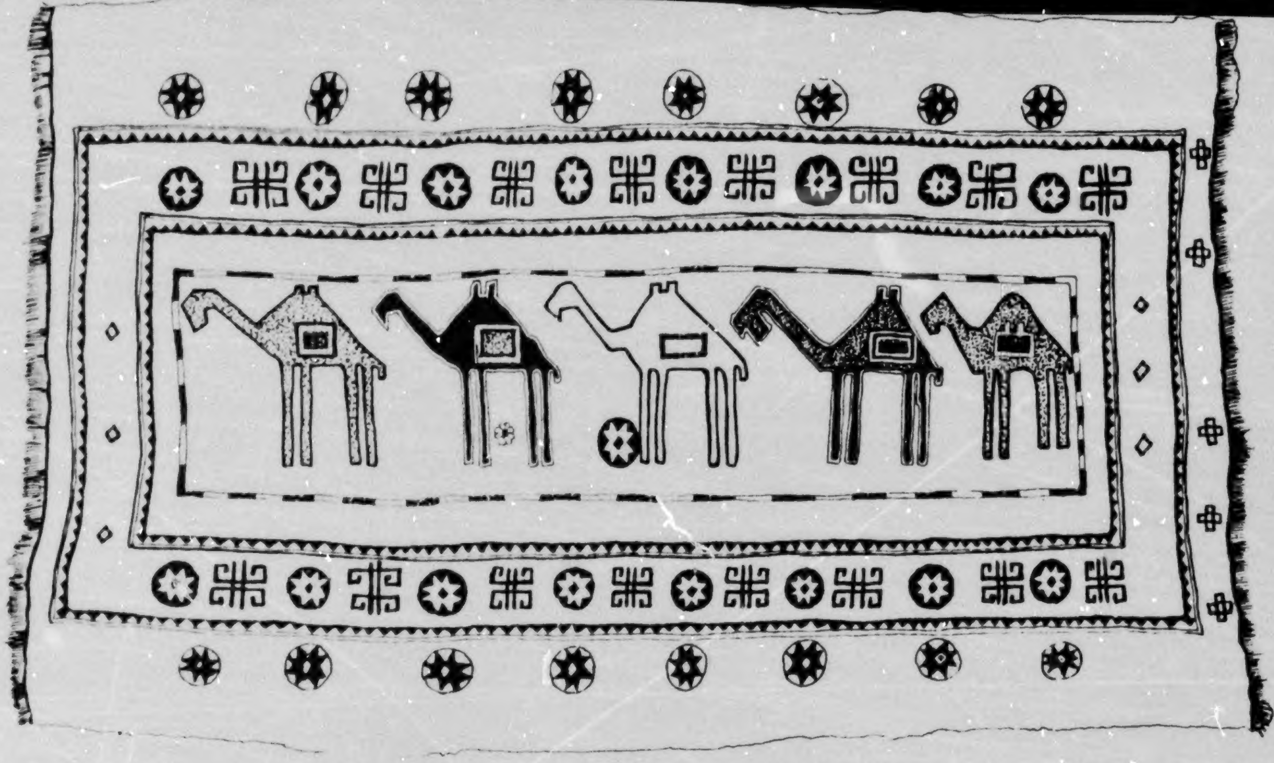
Today many nomads have settled and the revenues from oil have brought new roads to the desert — trucks speed past the camel and the radio brings news and music from distant cities. But nomadic life does continue and with it two significant features of the nomadic ecology: light, easily-transportable and hard-wearing woven fabrics, and the camel which carries the people and their belongings.

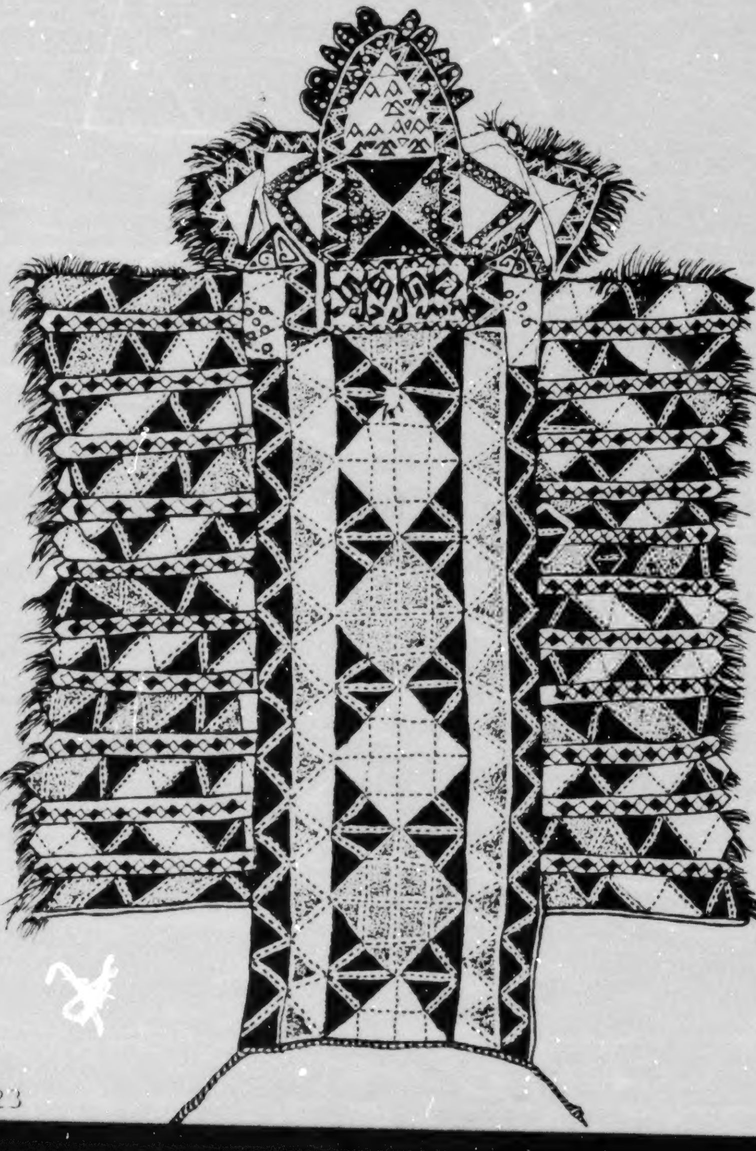
J. Maci

Weaving is thread construction, a process which lends itself to the creation of artifacts which are light and portable and hard-wearing. Storage and travelling bags, camel saddlebags, grain sacks and spindle bags have all been important in the travelling life of nomadic people. But like the carpet which has the practical function of keeping down dust in summer and providing warmth in winter, and the dividing curtain which provides privacy and insulation in the tent, these artifacts are given aesthetic and symbolic appeal too. Carpets and cushions are made for comfort : they are the furniture of nomadic tents, and their usefulness being bound up with human relaxation, it is easy to understand how they came to be patterned for visual pleasure. The patterning of utilitarian objects such as bags and sacks, and the camel blanket on which the rider's legs rest, is a way of recognizing the importance of such objects in daily life. Other nomadic woven pieces have no utilitarian purpose and are patterned in order to celebrate a special occasion such as a wedding or to demonstrate pride in the possession of a particular animal or object. And of course the pattern expresses the culture and sensibility of the weaver. The camel's brightly patterned headstall, or the libad, a camel and litter decoration made of multi-coloured patterned sections hung with tassels and ornamented with blue glass rings, used on festive days and at tribal weddings - these works provide pleasure, express significance, and confer meaning.



A typical example of the long camel band which is used to fasten loads onto camels. This is a work of the Qashqai tribe, though similar pieces are made all over Iran. The design which runs the length of the band features geometric and stylized animal motifs. The image of the camel in particular features on those artifact whose use is bound up with the camel's role in nomadic life.





The rug illustrated above is not a prototype from any particular town or district, but *Caucasian* tribal rugs sometimes include such stylized camel motifs in the central field. The arrangement of the motifs is very effective in expressing the idea of the camel caravan: at the same time each animal has an individual character. Mohammed himself worked as a guide on the camel caravans that carried frankincense and silk through Mecca north to Syria. A story told about the camel in Islam is that Allah has 99 names, the One, the Great, the Powerful, the Merciful, etc.; His 100th name the Archangel Gabriel whispered into the camel's ear, and since that day he bears himself proudly.

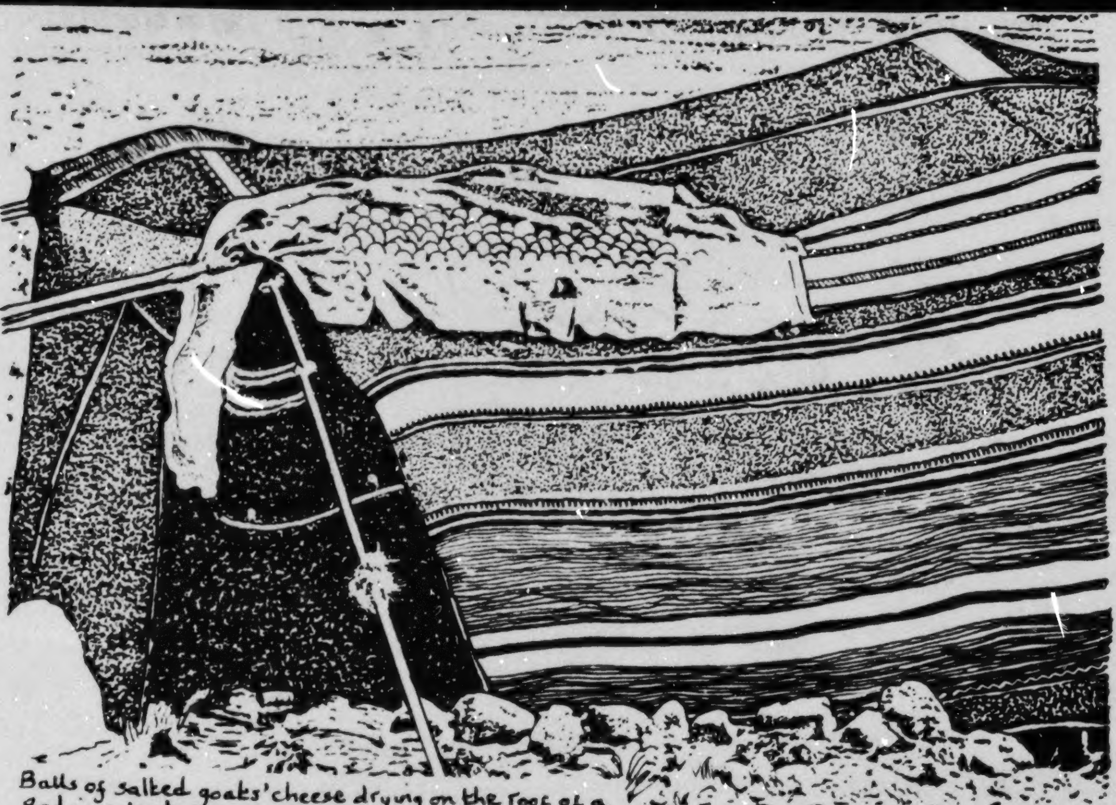
The trapping on the left is used to decorate the head and neck of a camel for bridal processions at *Turkoman* tribal weddings. It is a patchwork of flannel and cotton with embroidered motifs, and feathers and buttons sewn on.

A building is a permanent structure fixed in a particular place; weaving, which creates materials which are light, transportable, and perishable, would seem to be quite the opposite of architecture in its characteristics. But the two are related in process, history, and function. Building and weaving both create form by constructing with separate parts which are visible as structural units in the completed work; both are even older than pottery or metal work where the process fuses the material elements, rather than linking them together. Both building and weaving have provided people with shelter: one for a settled life, and one for a travelling life. Woven fabrics have satisfied a need for an effective shelter which could be quickly and easily assembled and dismantled, which could be rolled and folded to a reduced size, and which was light enough to be practically transportable.

Tents are still vital to the nomadic peoples of the world and these 'textile houses' allow people to travel in arid areas where no natural shelters, or materials for the construction of shelters, exist . Today in villages in Jordan, Lebanon, and Syria strips of material are woven on vertical looms by male weavers for the walls and roofs of Bedouin tents: and the tent is called bayt al-sha'ar, or 'house of hair'. The tent is a house which is flexible both in material and in design: the fabric from which its parts are made is pliable, and the arrangement of the tent walls may be varied according to circumstances. Since the walls are neither rigid nor supporting, they can be raised and tied back to ventilate the tent when it is hot. In cold weather another characteristic of the woven textiles becomes apparent: insulating quality, which helps to retain heat. Significantly, the parts of a Bedouin tent are called by names which refer back to the human body. The front corner poles are 'hands' , the back corner poles 'legs', the front of the tent 'the face', and the back of the tent 'the back of the head'. The tent is a habitation which is woven of insulating and pliable material: it is both a house and a third skin which protects us from the weather, like the clothes we wear on our bodies and which are our second skin. The abagah of the Bedouin of North

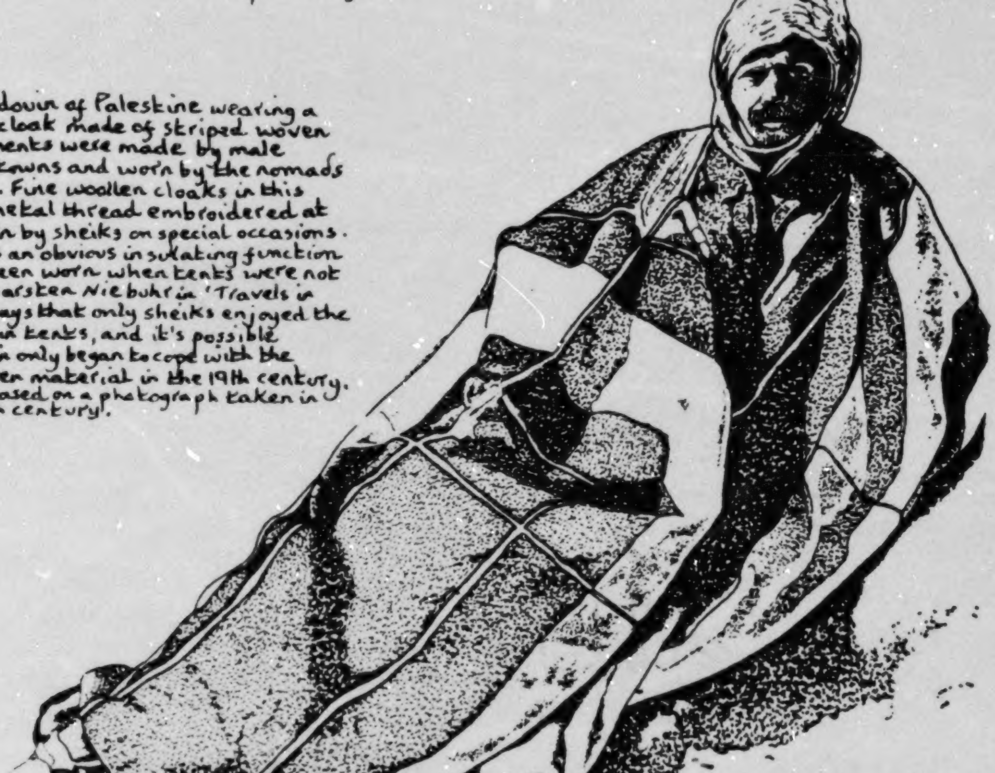
Arabia is a sleeveless cloak which envelops the body of the wearer, almost like a small tent. Weaving fabricates a man-made counterpart to the animal hides which first clothed people, and was used for its ability to expand when wet and shed rainwater, to protect from the wind and provide shade. Today, when, as travellers, we become 'temporary nomads' ourselves, we still use the tent as a travelling home.

If the first man-made shelters were wattle structures, woven from animal hides, bark and leaves, then this method of building, along with the development of basket weaving, gave rise to structural principles which were then utilised in weaving with yarn spun from animal hair. This is clear in the example of twined weft patterns. The weaver uses two strands of weft thread at a time and with the fingers inserts one over and one under one,two or three warp threads to make diamonds, a technique which is essentially the same as that used in twined basketry. There is a balanced interplay in the weaving process between material constraints and the active forming on the part of the weaver: the Bedouin tent shows that physical constraints may largely determine the pattern of the woven walls. The walls and roof are too large to be woven on even a large vertical loom; consequently they are made up of woven strips of goat hair and wool cloth which are sewn together. The fitting together of different sections inevitably creates patterns and these are usually accentuated by cotton stripes in the wool cloth. If this seems an ad hoc form of pattern dictated by practical considerations alone, then the collage process behind it was also used for the tent dividing curtain and this has aesthetic and symbolic appeal. The curtain dividing the men's and women's sections of the tent separates the public and private domains as is customary in Islam. It is usually patterned and the 'good' side of the weave faces into the men's section where public entertainment and discussion of tribal business takes place. The pattern is the result of joining different woven pieces in horizontal bands and in vertical, rectangluar sections. Patterned rugs and cushions are brought from storage in the women's section when guests arrive and are laid out in the men's section. In fact, before



Balls of salted goats' cheese drying on the roof of a Bedouin tent: the tent is an ingenious structure which serves a variety of needs in Bedouin ecology. Horizontal strips are sewn together to make the tent walls: this creates a bold pattern of stripes.

Body tent: a Bedouin of Palestine wearing a large sleeveless cloak made of striped woven wool. These garments were made by male weavers in the towns and worn by the nomads of north Arabia. Fine woollen cloaks in this style, but with metal thread embroidered at the neck, are worn by sheiks on special occasions. The garment has an obvious insulating function and must have been worn when tents were not so abundant. Karsten Niebuhr in 'Travels in Arabia' (1792) says that only sheiks enjoyed the luxury of living in tents, and it's possible that the Bedouin only began to cope with the demand for woven material in the 19th century. This drawing is based on a photograph taken in the early 20th century.



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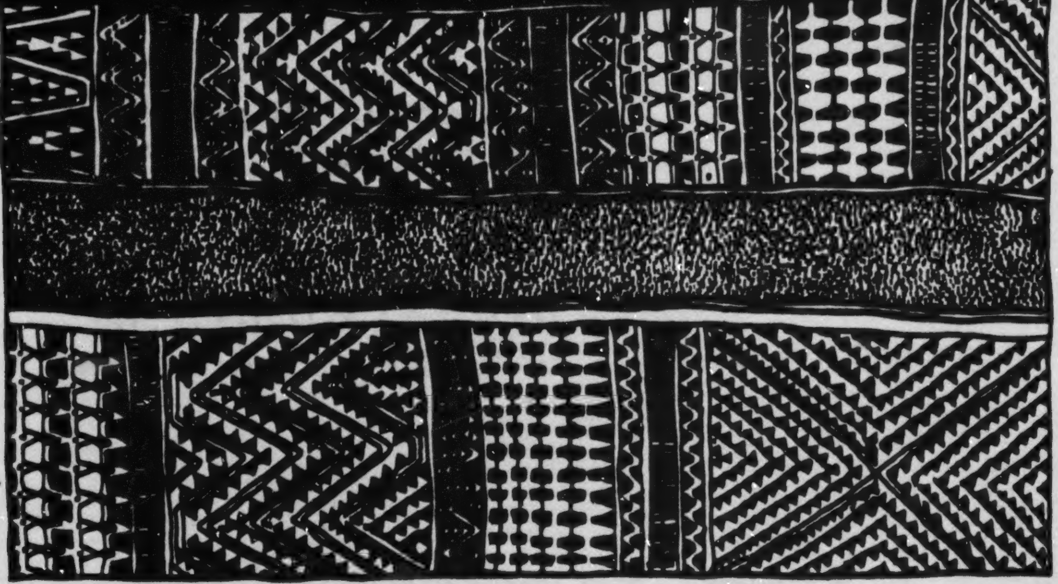
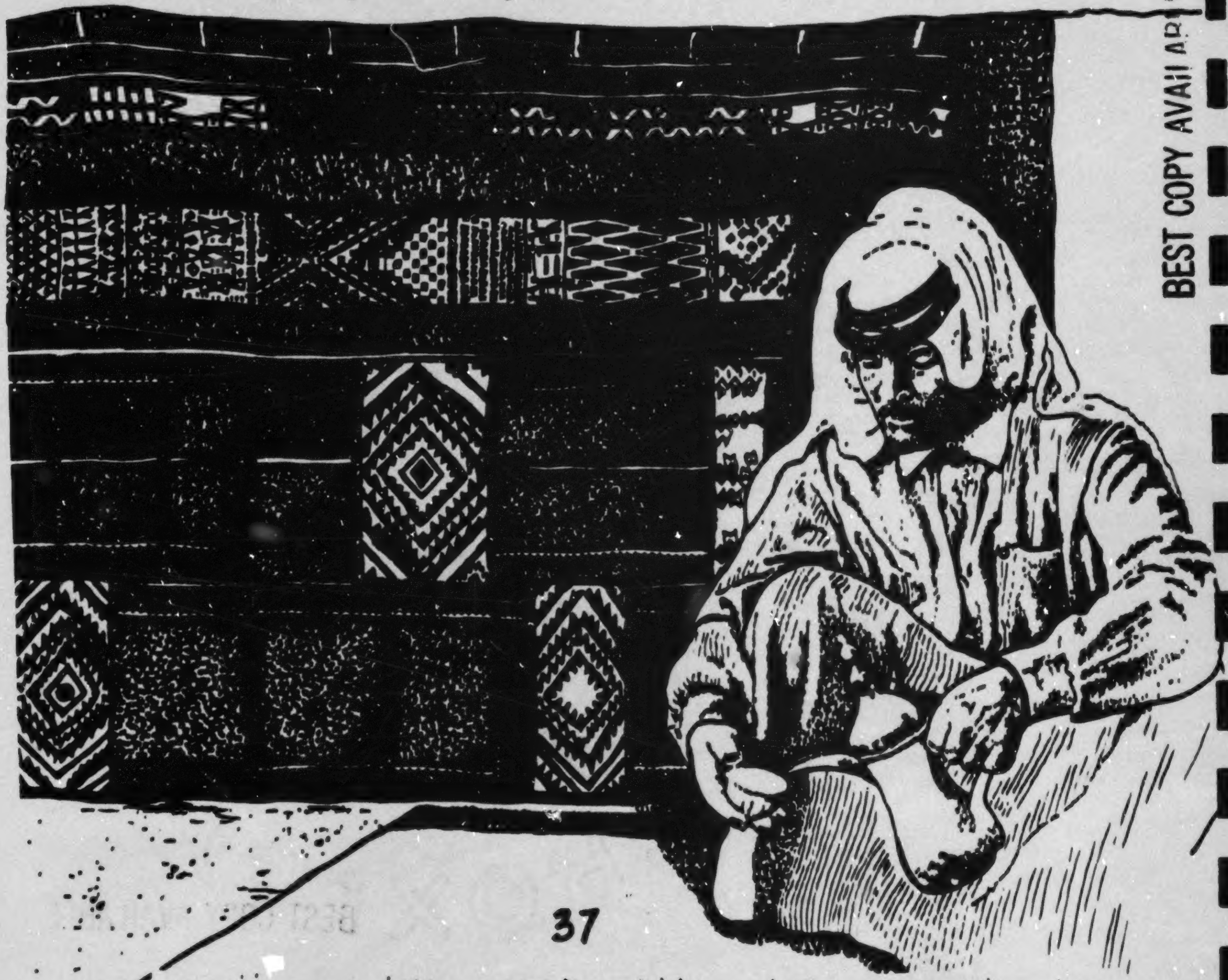


Section of a tent dividing curtain made by the Bedouin of Jordan: woven strips are sewn together, patterned pieces alternating with plain weave. The result is a rhythmical visual contrast and counterpoint. The curtain is not assembled according to a fixed plan, and is mended and added to in time: but the effect is never haphazard, the horizontal rows and vertical rectangular sections creating a structural grid.

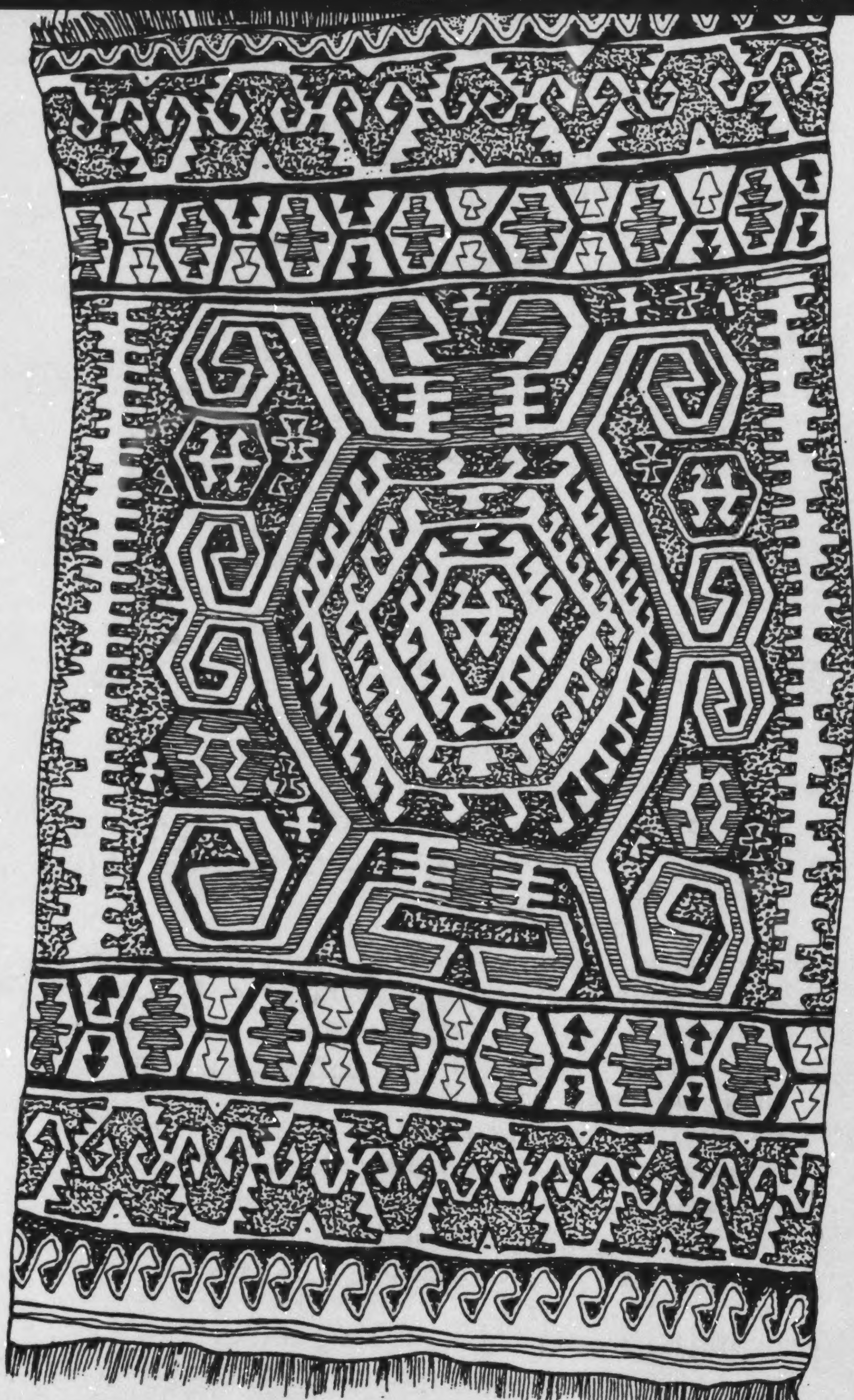


The dividing curtain is hung so that its good side faces into the mens' section of the tent where guests are received and tribal business discussed: the patterned curtain plays a part in the ritual of hospitality.

guests arrive there is very little to furnish the men's section, and the curtain will not be fully drawn: the extension of the curtain and the unrolling of rugs and piling up of cushions are therefore seen to be acts of hospitality. In this context pattern does more than provide visual appeal: it functions actively in the ritual of honouring guests.

The relation of pattern and hospitality is shown by those dividing curtains which were made as gifts from one tribal sheik to another. Further, the strips and pieces of a single curtain were sometimes woven by different tribes and these were then fitted together: as the curtain was constructed from its separate parts, so did the pattern become a physical embodiment of the concept of unity between people. This kind of curtain is a special example of what has occurred in the history of Islamic pattern generally: the fusion of different influences, the assimilation of designs from different cultures.

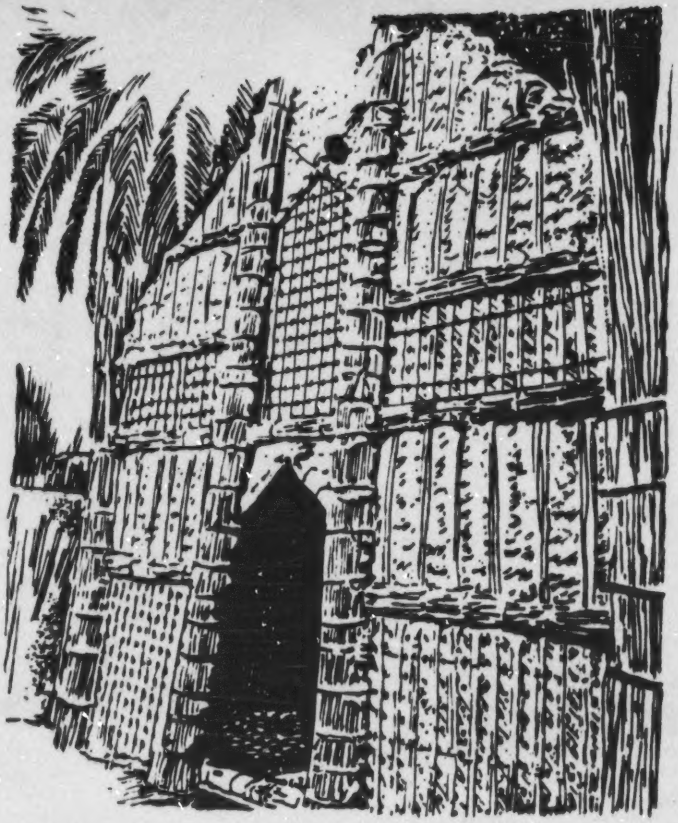
Today the most richly patterned dividing curtains are rarely made or seen, and this type of weaving is on the decline, though use of the curtain does continue, and the ethic of hospitality in Bedouin life has not disappeared. But life has changed for nomadic people, and if they have benefitted from twentieth century technology, they have also been forced to adjust to it. The art of pattern in nomadic culture has certainly been affected by manufactured synthetic textiles. One example is that Bedouin women no longer wear the *thob'ob*, a combination of dress, underdress and veil with baggy folds; the different layers insulated the body against heat and cold and the dress had embroidered zig-zag patterns. But today Badouin women prefer less voluminous dresses made of man-made fibres. To survive, the old weaving ecology must compete with these same man-made fibres. However, the painstaking process of spinning fleece, plying yarn, stringing the warp threads, and laboriously weaving and knotting by hand cannot compete with machine technology producing cheap, long-lasting products, even if the latter are aesthetically inferior to the old designs.



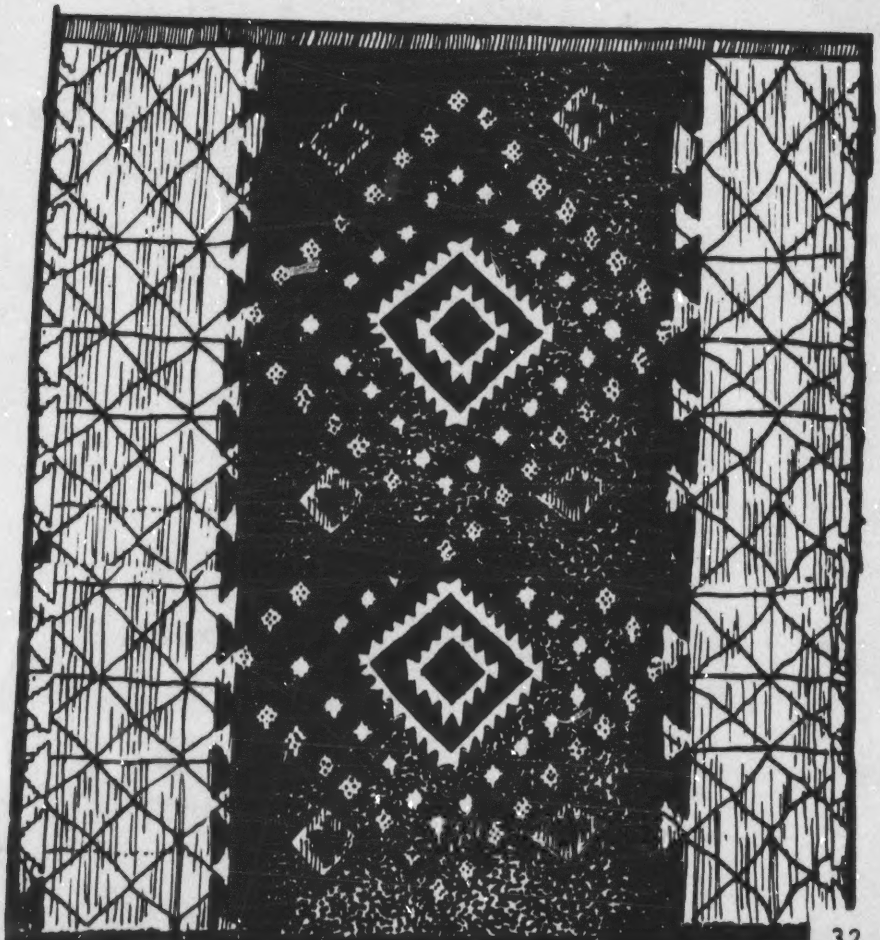
This kelim with its radiating hooked design is a late 18th century / early 19th century
work from Western Anatolia; it was the star exhibit in a kelim show held in London
a few years ago. There is now an established market for kelims in Europe, where they
are often used as floor rugs in the home, though in Islam they are primarily bed and
furniture covers, or wall hangings.

The symbolism of Bedouin embroidery still exists, and young girls wear blue embroidery before marriage and red embroidery afterwards. But already machine embroidery has superceded hand embroidery and in the Negev, for example, women's dresses are no longer richly embroidered in cross-stitch. In such small ways it is not only particular artifacts which begin to die out, but skills and a vocabulary of design many hundreds of years old. Nomadic culture may itself survive in a different form in a changed world, but much of its artistic expression may not since the most significant changes are those in transport, habitation, and clothing which directly affect the need for woven artifacts. If nomadic weaving survives and flourishes it will be through recognition of its historical importance and the special qualities of its design. Today, government and commercial weaving centres in contact with nomadic weavers attempt to preserve this part of the Islamic heritage. There is an established market in the West for carpets and rugs, the demand for which goes back to the Renaissance. Fairly recently a market has grown for kelims, flat woven, unknotted tapestry rugs which in Islam are used as bed covers and wall hangings. The demand for kelims shows an increased appreciation of Islamic design and people who cannot afford a good rug or carpet may buy kelims of quality at still reasonable prices. Some tribal artifacts are also bought and sold, including grain sacks, storage bags, and even Berber wedding dresses. So it may be that the future of some tribal work lies in the cottage industry production of weaving where work is made in response to market demand. That demand from the West may be beneficial is ironic, since it was the industrialised textiles of the West that first placed tribal weaving in jeopardy. Tribal artifacts will still be individually made by hand, but their place within the old tribal ecology will be one of preserved memory rather than one of active use.

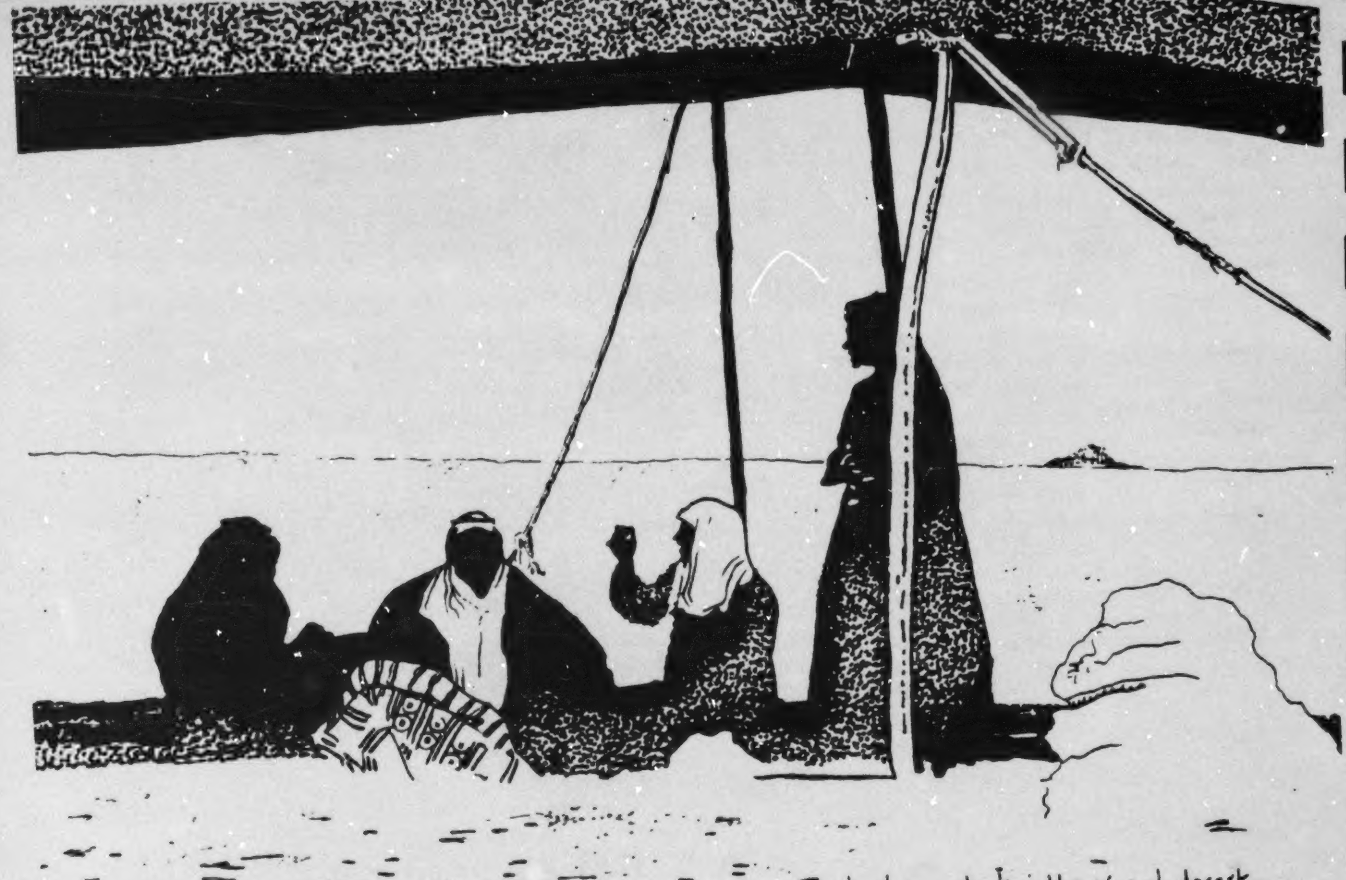
As well as undergoing great technological and economic change, parts of the Islamic world are presently in another state of crisis, that of war. The Iran-Iraq war has had a devastating effect upon the culture of the Marsh Arabs of Southern Iraq. These Arabs, closely related to the desert nomadic tribes East of the Euphrates, have lived on man-made islands in the marshes where they built the *mudhif*, the reed house which was their home. Just as the walls of the Bedouin tent may be raised to lowered to allow the air to circulate or to shut out the sun, so does each mudhif have finely woven reed screens which operate to the same principal. In the mid 19th century Sir Henry Layard wrote of the mudhif: 'The remarkable elegance of its construction did infinite credit to the taste and skill of its Arab builders, who were true architects in the best sense of the word'. The reed house is constructed by weaving trellises of reeds between columns of plaited reeds. The doorways are formed by clusters of long canes planted in the ground and then fixed together at the top to form pointed arces. The reeds in the column are plaited to give the structure strength, and the walls are woven as a lattice for ventilation: but from these practical considerations emerge visual patterns which are themselves appealing. Significantly, the Marsh Arabs, recognising this potential for design, would weave twists of coloured thread around the reeds to create more elaborate detailed patterns. This links them again to the Bedouin of the desert, where women make patterned firescreens for their section of the tent in just this way from split reeds twisted and tied with coloured wool. Craftsmen in Syrian towns have made such screens for the nomads of Syria and Jordan. The split reed house was sometimes built on a large scale with some mudhifs over one hundred feet long, their majestic patterns an embodiment of both material constraints and human design.



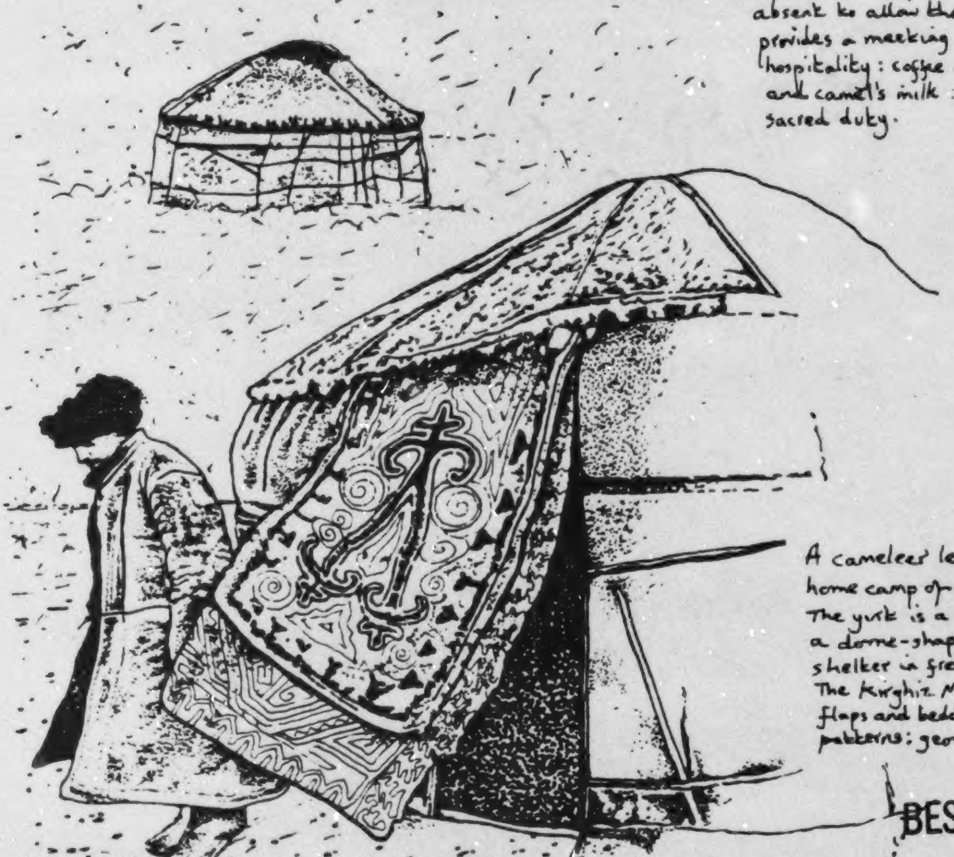
Reed house, *mudhif*, made by the Marsh Arabs of Iraq. The pillars, beams, and walls are made of plaited and woven split reeds, a process which inevitably creates patterns which the Marsh Arabs have developed over hundreds of years. Light enters the house through interstices in the lattice walls, patterning the interior with diamonds of light. Some mudhifs have been made which are over one hundred feet long: they are impressive architectural structures, built on man-made islands by people whose lives have centred upon use of the canoe. Today the reed houses burn, and the Marsh Arabs find themselves fighting in a ferocious modern war.



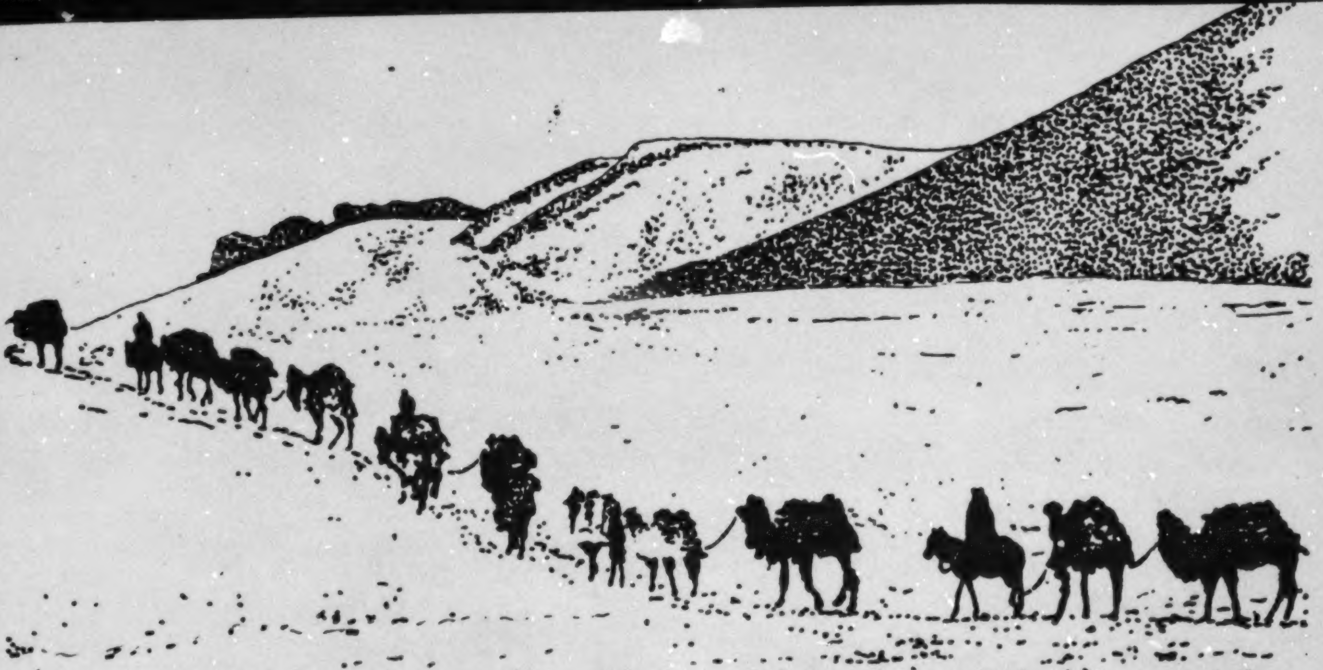
Firescreen woven from reeds by craftsmen in Syria. Orange, red, black and white wool is wound around each reed individually; the reeds are then fastened together with twined woollen thread, creating diamond patterns and diagonal crossing lines. Such screens have traditionally been used by Bedouin women in their section of the family tent in Syria and Jordan.



The tent of a sheik in the Nafud desert: here the roof provides shade and the walls are absent to allow the air to circulate. The tent provides a meeting place where the Bedouin extend hospitality: coffee and tea, lamb and pilaf, dates and camel's milk: to the Bedouin, hospitality is a sacred duty.

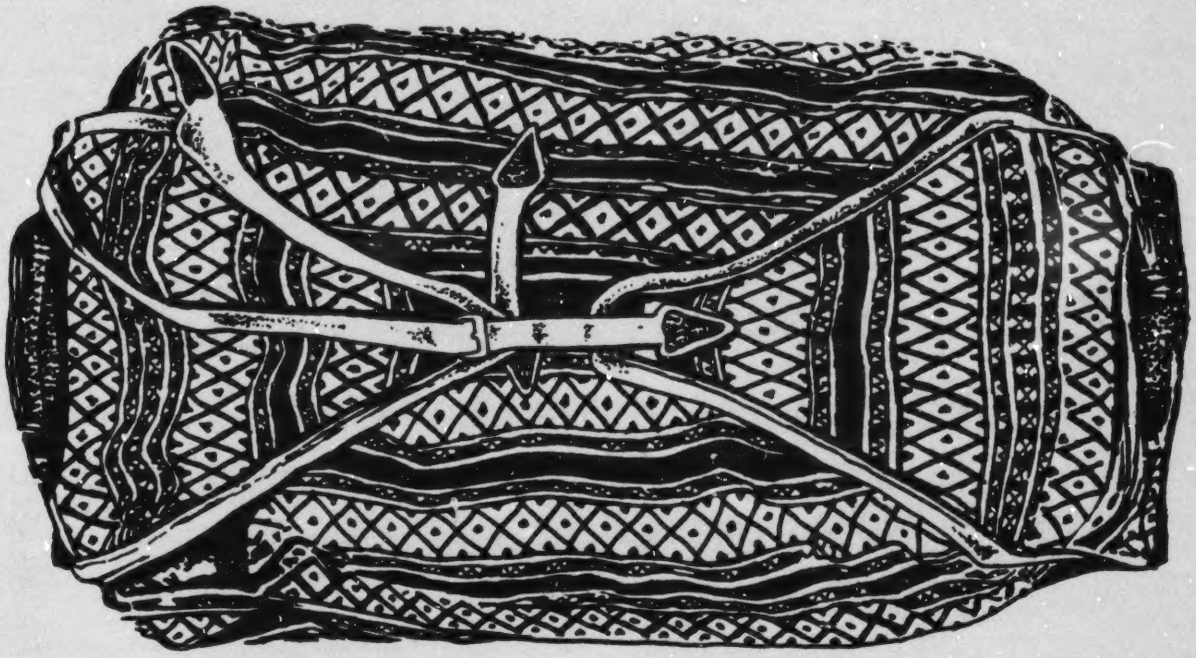


A cameleer leaves a yurt at Mulk Ali, the home camp of Kirghiz herdsmen in Afghanistan. The yurt is a tent made of heavy felt lashed t a dome-shaped willow frame: it provides a warm shelter in freezing conditions at high altitudes. The Kirghiz Moslems make felt hangings, door flaps and bedding with appliqué and embroidered patterns: geometric linear designs predominate.

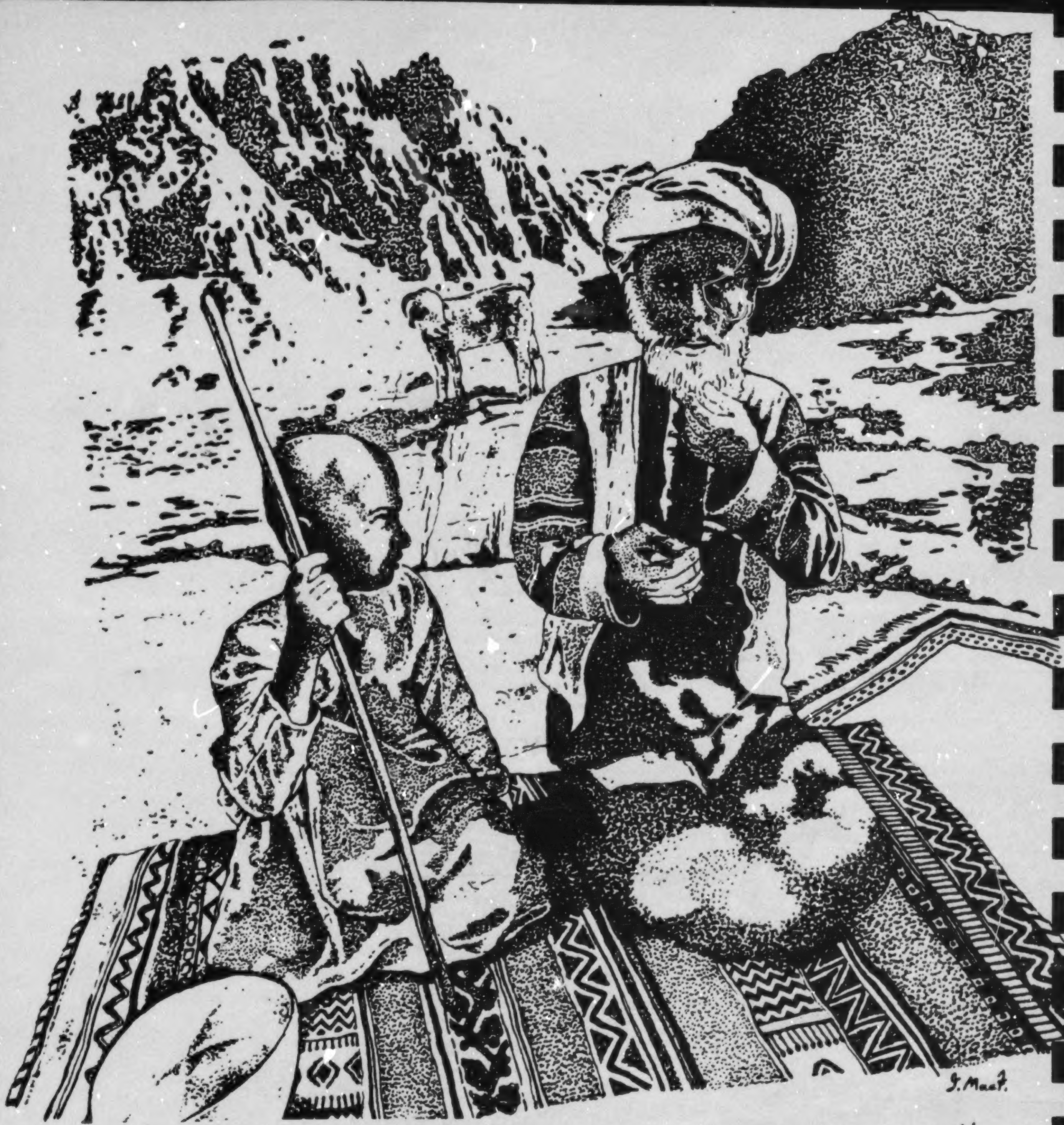


A camel caravan in the winter snow in the mountains of Afghanistan. The Moslem Kirghiz tribe have Bactrian camels which can carry a load of 600 pounds and yaks which can carry 150 pounds. Twice each winter the caravan makes the 280 mile round trip from Mulk Ali to Khandud to stock up on sugar, salt, tea, and other necessities. Tea is valuable to the Kirghiz and a Kirghiz carries it on his/her person in a small bag known as a chaikhalka: this bag is embroidered with patterns, an example of how pattern is used to highlight the importance of a particular artifact. The chaqmaq of the Kirghiz was used before the invention of matches to light fires: a piece of curved steel mounted in brass, it was struck against a flint to produce sparks. Again, this valued object was decorated with patterns, floral designs of the kind also found in Kirghiz fabrics. For the latter, the camels of the caravan yield the much-prized wool.

The war in Afghanistan has put in jeopardy this whole way of life.

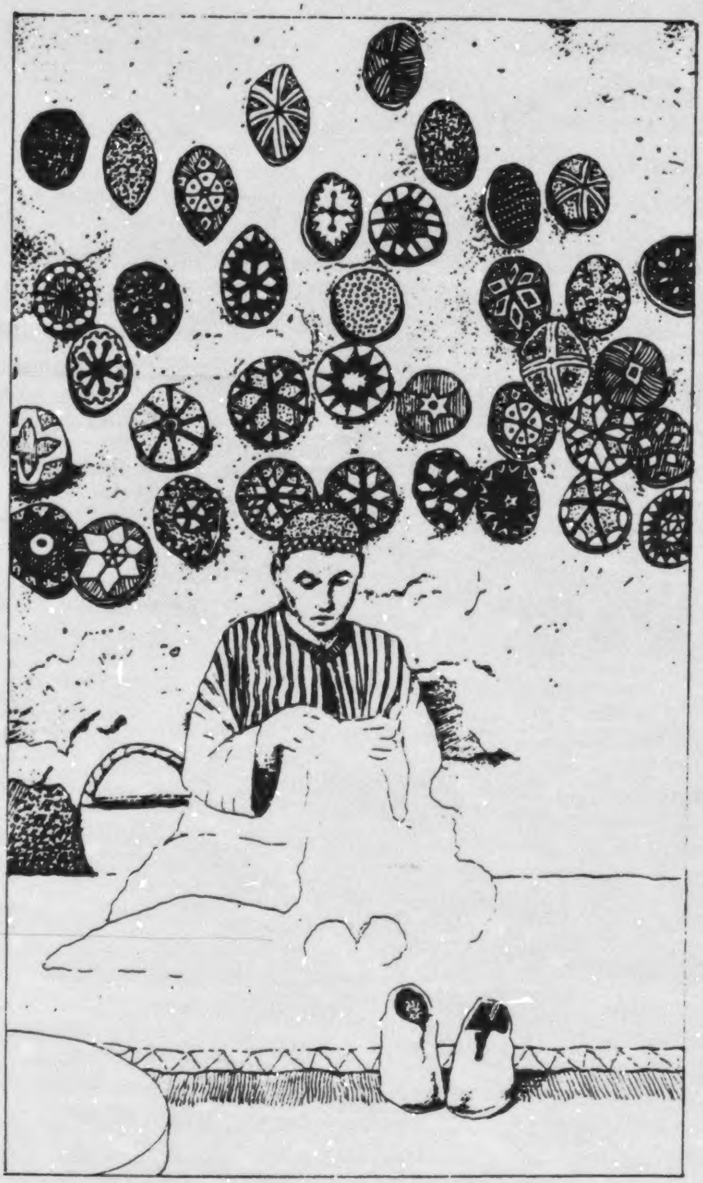


A patterned bedding bag of a kind made by the Khamsa and Qashqai tribes. The sides and straps are made of leather and the pattern is extra-weft work on a plain-weave ground. The predominant colours are rust, yellow and orange. Patterns pervade nomadic culture: this bag will contain patterned bed-clothes and blankets, and when the tribe move camp it will be fastened onto a camel with a patterned camel band.



A tribesman and his son rest upon a rug made from patterned strips sewn together: this technique, which allows a large piece to be constructed from separate loom widths, creates an unforseen, but never unharmonious design. The physical constraints of the horizontal loom must originally have demanded this kind of collage when a large rug was required: later, the larger horizontal loom and the vertical loom, although able to cope with a large rug size, would be used to weave patterns in a series of rows and stripes — a design approach which emerged from the constraints of the more primitive loom. In Morocco especially a pattern of horizontal stripes is common in rugs, the stripes filled with zig-zag and diamond shapes: such works often have no system of borders and guard stripes, rather they are extensive, having an open, not a closed form. Some weavers making patterns of this kind see each rug not as a finished, complete, separate work but as one part or section of an endless weave: the total pattern will only be known to Allah.

PATTERN IN ISLAMIC RUGS AND CARPETS.



A cap-maker in Morocco: the woven and embroidered patterns demonstrate how a basic shape — here the circular shape of the cap — becomes the basis of a repertoire of designs. Here the bands pass through a central point, dividing the circle into sections, creating stars, wheels, and other radiating patterns. Similarly, the rectangular format of the rug and carpet, determined by loom width, provides the basic scheme for pattern-filling: rectangular borders and guards, and a central field. Horizontal, vertical, and diagonal axes are the underlying principles of all carpet design.

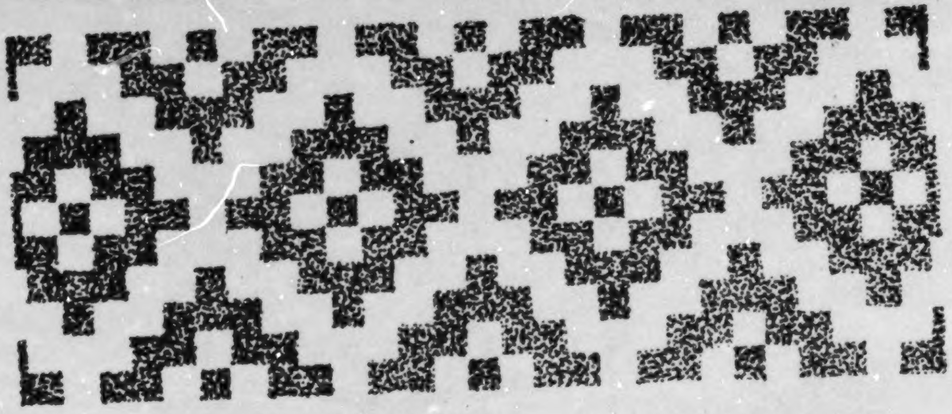
H6

DESIGN

Both tribal rugs and the more curvilinear pictorial court carpets consist of a central field and a border, the main border being accompanied by narrower bands known as guard stripes. The central field may be patterned by multiple repeats of a particular motif , or by a variety of motifs, or by a single main medallion, which may be floral or geometric, square, circular or rectangular. There are many medallion shapes which include spiral scrolls, clover leaves, flames, trefoils, and arabesques, showing how a certain carpet format is not restrictive but leads to variation and invention of pattern within the guidelines. In figurative carpets the field may be entirely occupied by a natural scene, often with a combination of viewpoints so that the scene may be viewed from any side of the carpet, emphasising the essential, non-illusionary devices of Islamic figuration.

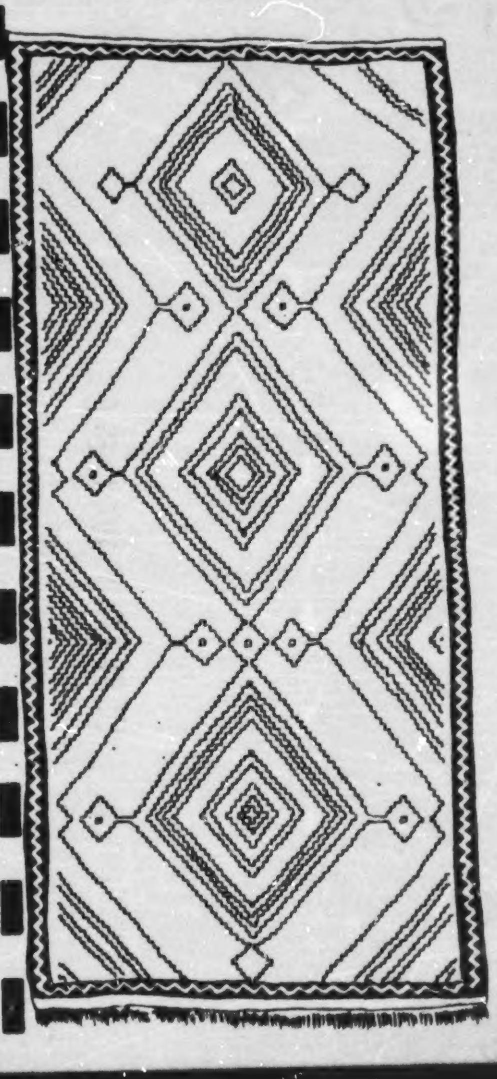
Alternatively, one or more figurative motifs may be set off against the coloured ground - for example, a vase, a row of cypress trees, a caravan of camels; the place held by such motifs in the pattern composition necessarily gives them a rhythmic decorative function and such work, though figurative, does not work against the spirit of the Koran when it warns against the making of idolatrous images. In terms of structure the repetition and variation of motifs in the central field may occur in horizontal, vertical or diagonal rows : these are the basic axes of regular design. A combination of axes gives the carpet its interrelation of devices within lattice structures. Carpets vary from the 'endless' repetition of motifs in rows, to designs based on the medallion which defines the inner field as a background and against this sets up a system of connected, separated and 'echoed' motifs and medallions.

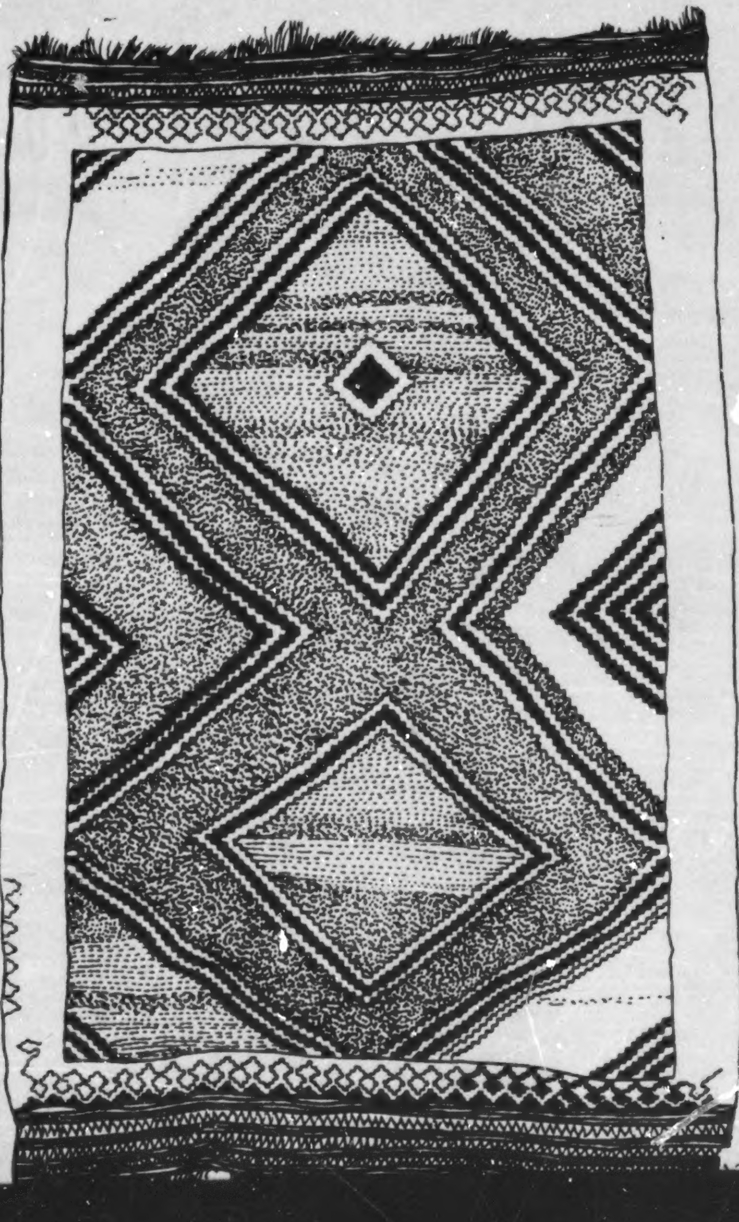
The pattern in Islamic rugs and carpets may be systematic, a network of uniform elements which do not depart from the set of rules by which each pattern is constructed, but still each carpet and rug is characterised physically by the method of working and the material employed, the number of knots per square inch, the variation in dyed colour, and the thickness of the piled yarn all play a vital part in the creation of the final work. Unpredictable physical variations do not deviate from the

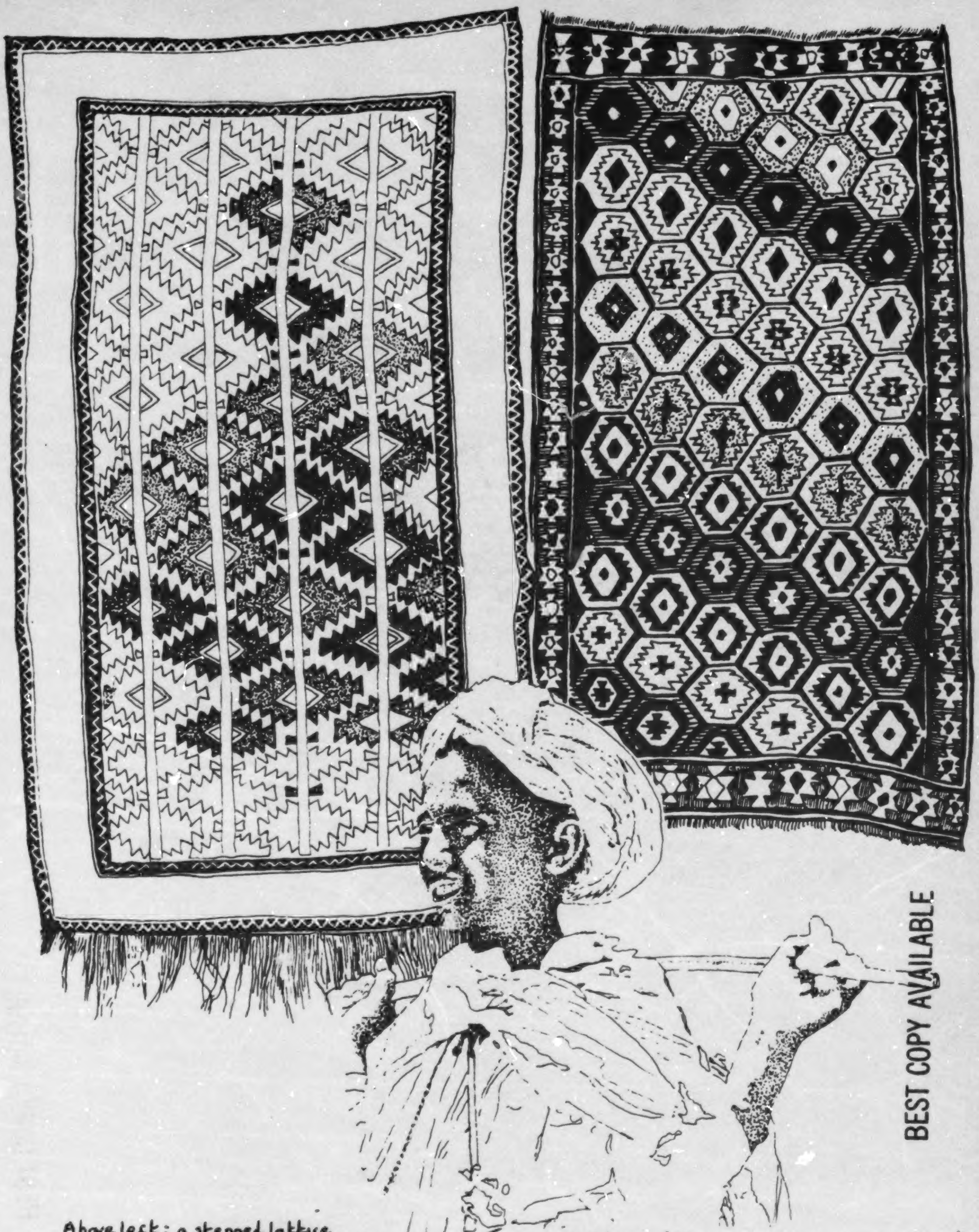


Pattern generation is the systematic connection of a central point to points placed regularly around it. In weaving this process is elemental as colored threads and knots are 'staggered' to create diamond stepping designs; row upon row gives rise to the zig-zag lattice. This basic principle has lead to the systematic development of diagonal motifs as seen in the Kelim from South Iran, below: here there is no particular motif to be seized upon, rather a system of diagonals woven in stepping lines which enclose and simultaneously lie inside other parallel diamonds.

Below: another example of a Kelim from South Iran, probably woven by the Lui's tribe from the district of Fars. The design is much simpler and less cluttered than that preferred by the Qashqai tribe. The design, like the one below left, owes something to Persian book covers which influenced tribal as well as court carpet patterns.







Above left: a stepped lattice with running vertical bands. The zig-zag border patterns echo the essential design. The colours run in diagonal rows, although this is varied which creates a 'flickering' effect: improvised notes within a system.

Above right: diagonal rows of hexagons in alternating ivory, red and rust colours on a dark blue and brown-black ground. This is a Kelim from Garmsar, North Iran. The border is of stepped polygons.

prescribed regularity of the design, but create certain irregular sensual refinements within the system. Sometimes there are variations in the particular shade of a dyed yarn, creating streaks in the carpet just where the design requires a repetition of the same colour. These *abrasc*, however, are not regarded as faults, rather the luminous effects created are highly prized, enlivening the carpet ground and the surface of the wool. Additionally, such faults show the humility of all man-made works, which must inevitably fall short of God's perfection.

KNOTTING

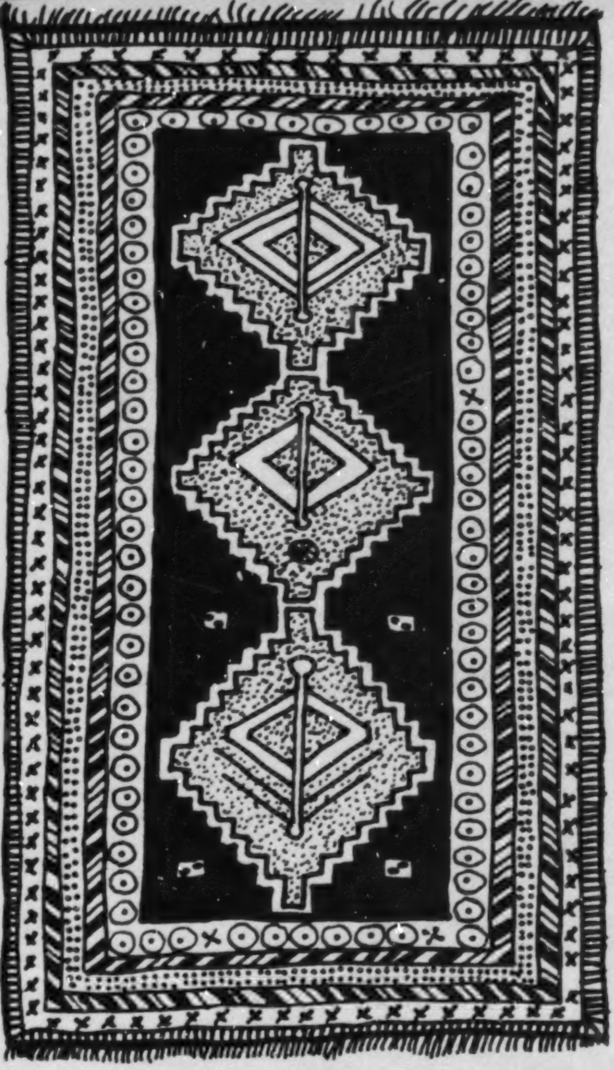
The two principal knots used in rug-making are the *Persian Senneh* and the *Turkish Ghiordes*. The Senneh is a single knot made by passing the woollen strand under one warp then over and around the next so that the two ends of the pile show on either side of each warp thread. This knot can be made to face to the left or to the right so that the lie of the pile can be in either direction. The Ghiordes is a double knot. It is made by looping the knot around two warp threads and bringing both ends of the wool out between them. the Turkish Ghiordes knot gives a firmer weave, although the single strand of the Persian Senneh knot allows far more flowing lines and apparently finer work because the knots occupy less space. Despite their names, the two knots are used throughout the rug-weaving world.

This knotting process is at least as old as the *Pazyryk* carpet which was made 2,500 years ago; the technique has remained essentially the same throughout Asia over two and a half millenia. Warp threads are stretched on a loom, the pile is knotted to these threads, and when a row of knots is complete a weft thread is inserted to hold the knots in place - this is the essence of the ancient art of knotting a carpet. Although it is slow and painstaking work, this technique has survived because it provides a firm structural tension for hard wearing fabric, and at the same time the introduction of differently coloured knotting threads makes possible a systematic creation of patterns. In this way we can see that the practical requirements of carpet making are inseparable from the way pattern is constructed: the pattern is not applied to the artefact, rather the pattern is structurally embodied in the carpet.

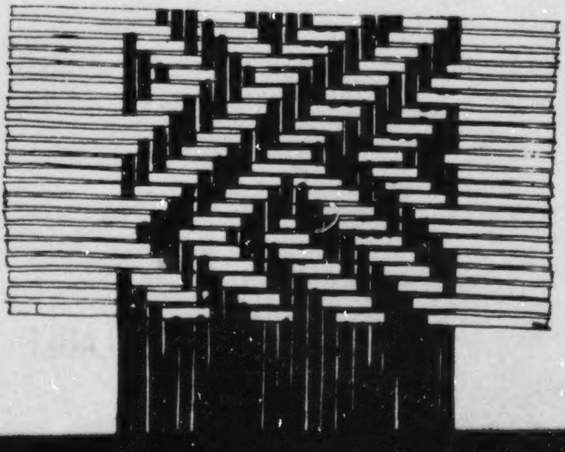
TEXTURE

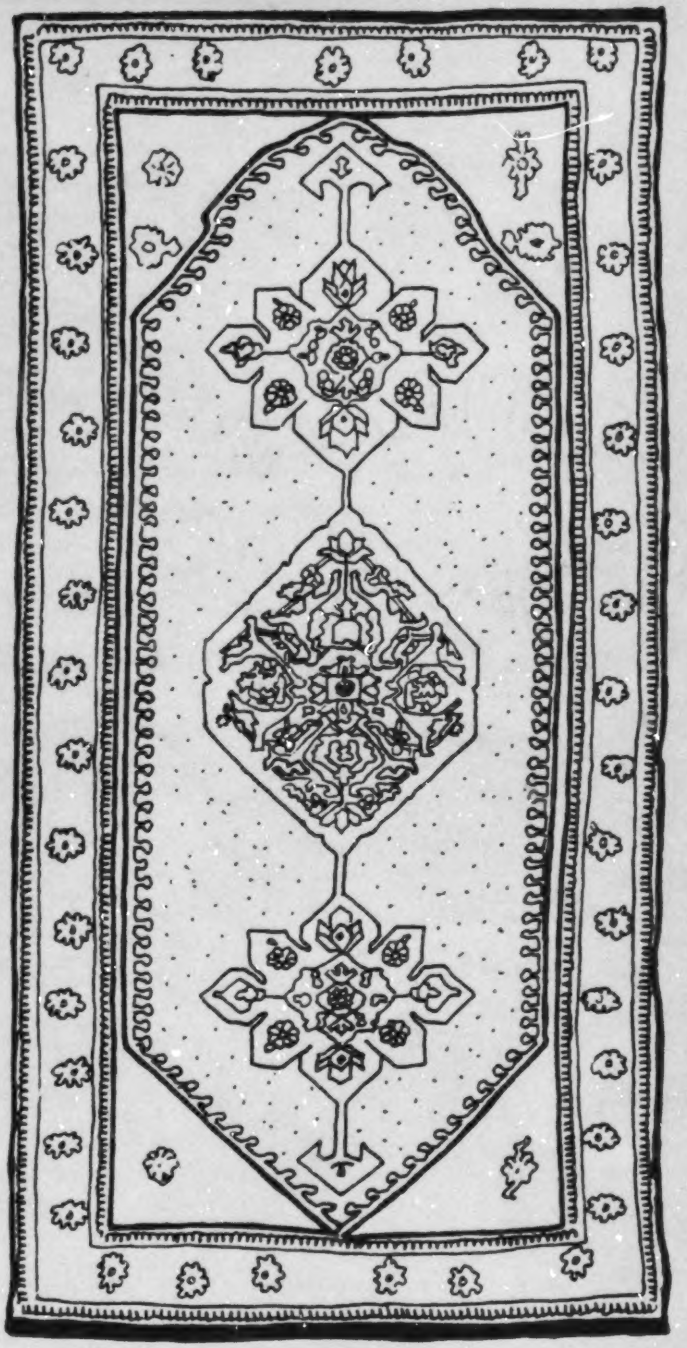
The practice of weaving is directly related to the pastoral culture of nomadic life. The sheep, goats and camels of the nomadic tribes provide the people with milk and meat, fuel from dung, skins for utensils, as well as being theessential transport and trade of nomadic people. The fibre for weaving comes from goats and sheep, as well as camels and cattle. The hair is usually coarse, and is collected and spun by the women and girls of a tribe who work the fibres into a rove, a loosely twisted thread which is wound into a skein. The spindle is moved up and down like a yo-yo, rolled along outside the spinner's thigh. The wheel has also been known for centuries in Islam and still exists despite the ready-made yarn which is available.

Wool is divided into two categories - 'harder', longer fibres for spinning warp yarn and 'softer', shorter fibres for the weft. Before spinning the wool is washed in clear water and left for three days to increase in volume, an inherent characteristic of wool being that it expands when wet. Then the warp wool is drawn with two long-toothed combs, one raking from the other until enough wool has been combed into a spindle shape. This process is repeated and the wool is steamed before being mounted on a stick to be spun onto a spindle. Weft yarn is not combed but carded with two 'bats' in a scraping process. This produces a pad of fibres on each card, which are divided and the four pieces joined to form a ribbon. Again, this process is repeated, the long ribbon being finally spun into the continuous weft yarn. This stage is crucial in determining the quality of the final carpet's strength and softness: in the bazaar, a prospective buyer both looks at the carpet patterns and feels the texture and resilience of the material with his fingers.

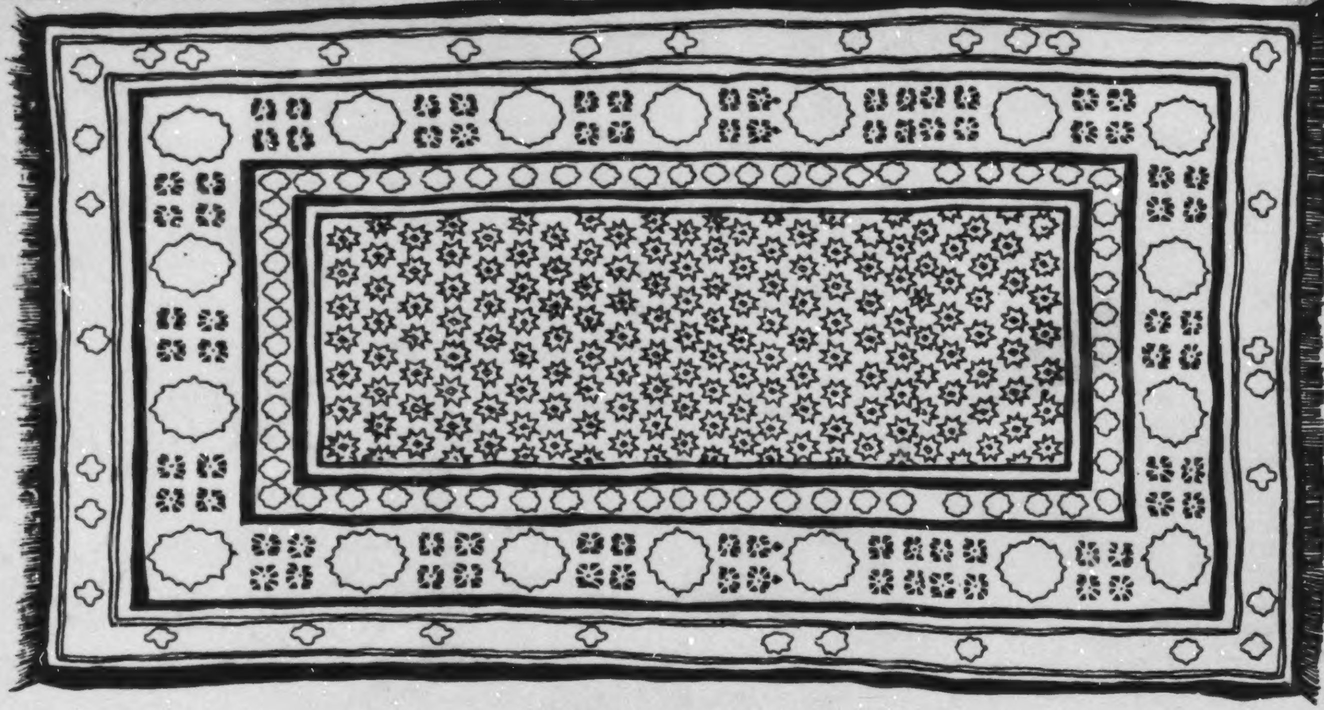


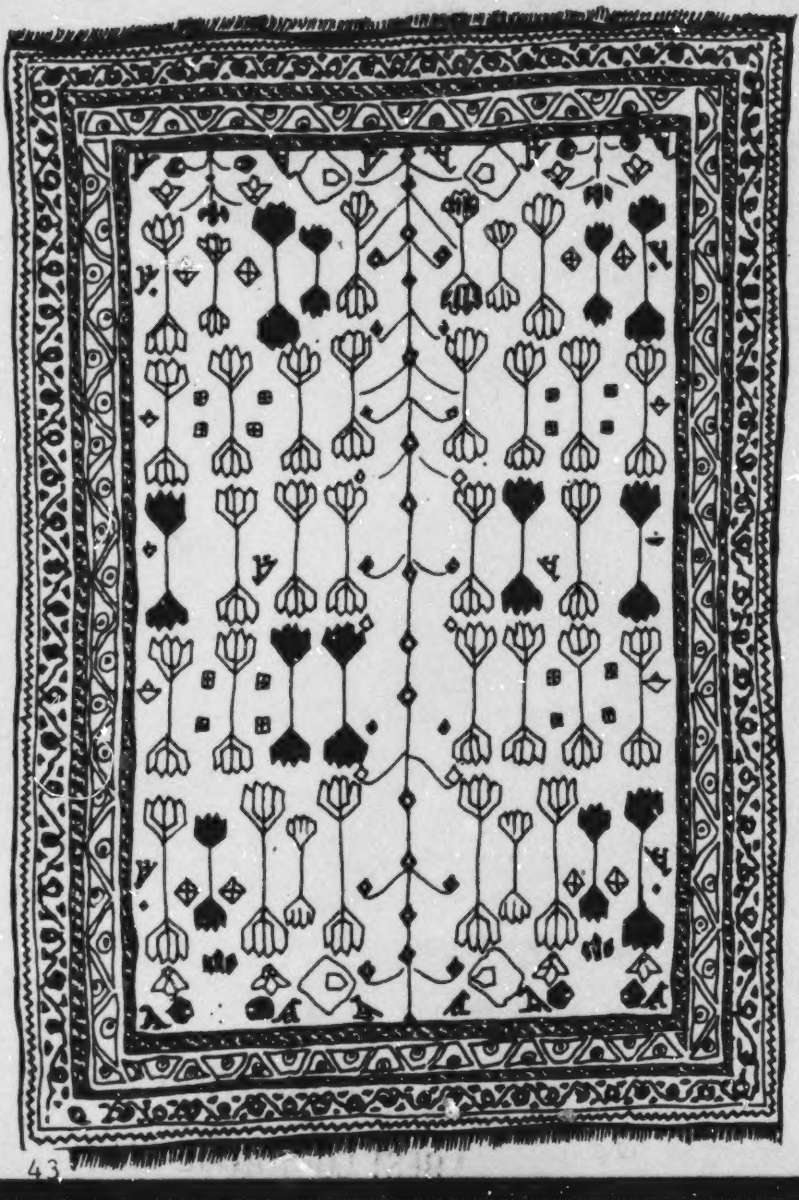
Luristan rug woven by the nomadic Luri tribe from the mountainous area of south-west Iran. This is a typical example of Luri geometric work with its three diamond motifs joined together by a stepped diagonal design: this, with the bright, luminous colours, creates a bold, striking effect. Luri rugs often have a Greek key pattern around the motifs in the central field: the Greek key is an ancient pattern which probably originated in simple mat weaving using dried grass and strips of leaf and bark. The design was carved on ivory ornaments in the Ukraine 15,000 years ago.





A 19th century Karabagh carpet from the Caucasus. Karabagh is the southernmost province of the Caucasus and consequently its carpets have been strongly influenced by Persian designs. It is clearly a more sophisticated work than the Luri rug above left, and in fact is the product of a workshop rather than a tribal weave. Rather than a bold, stepped design, this Karabagh features a central medallion attached by slender lines to two pendants on the red inner field. In the 18th century, carpet makers from Karabagh were invited to France where they made Savonnerie carpets which reflect Western floral designs but in a purely geometric manner. Savonnerie designs have become extremely stylized.

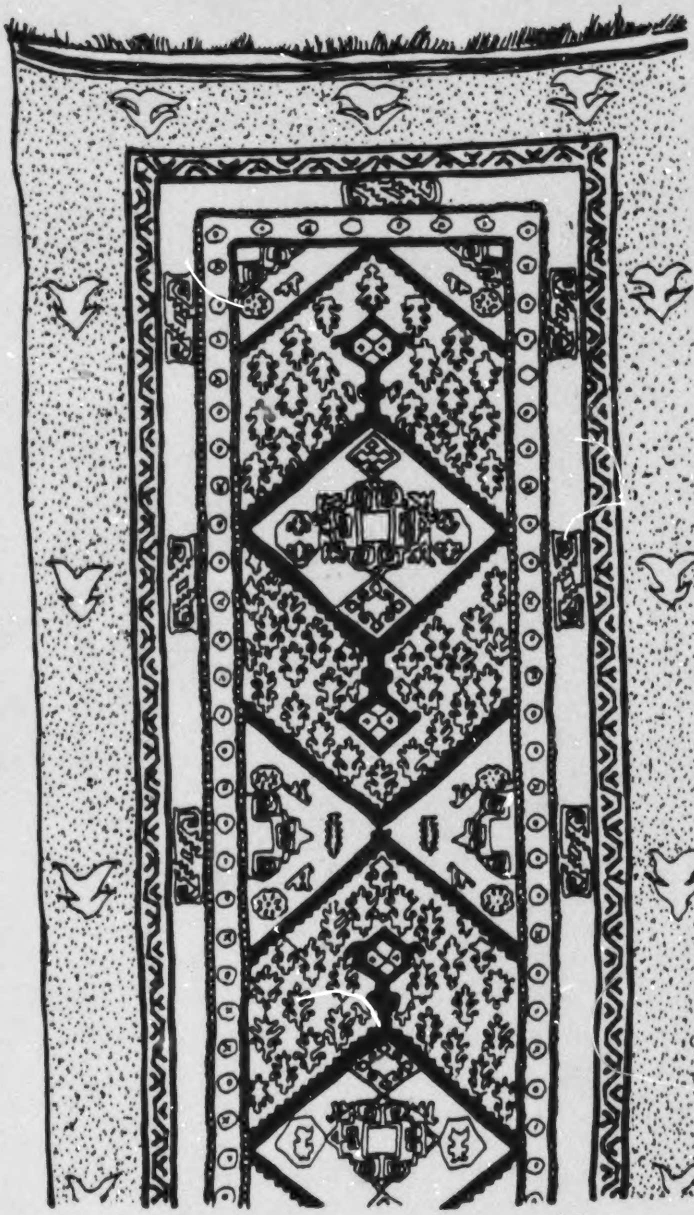




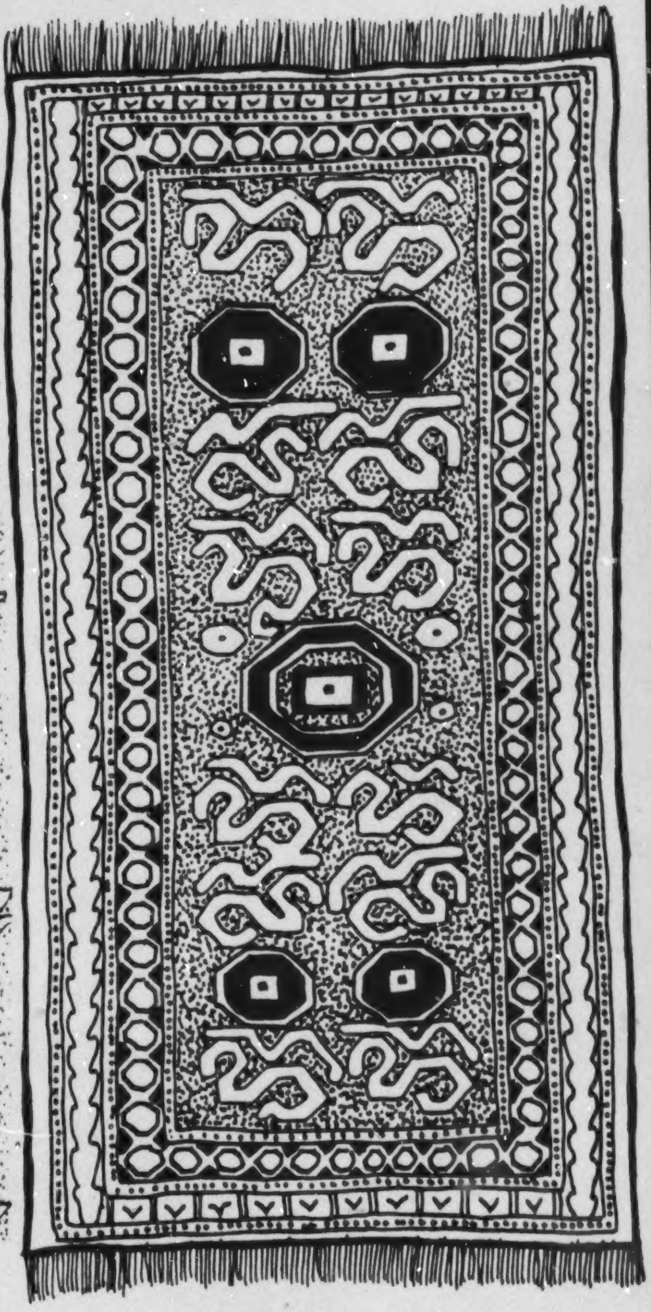
Above: 19th century Shirvan Talish carpet from the Caucasus. The central field is filled with eight-pointed stars, a design common to Talish works. The main borders of these carpets often feature Mongolian ornaments, and in fact they are the product of exogamy, the practice of marrying outside one's tribal group: it was in this way that certain designs were exchanged and new variations and hybrids created. Tribal pattern should therefore be seen as visually embodying the social relations of different groups.

Left: flower carpet by the Bakhtiari tribe woven in the 19th century. The flowers are stylized, even geometrical motifs which are reflected upon themselves so that like many carpets there is no single determined viewpoint.

This work captures something of the Persian taste for formal gardens where each flower has its place in a balanced scheme: this preference is to be found in tribal as well as court carpets.



__Hamadan__ carpet from Persia. The central field has medallions and corner pieces on a patterned rather than a plain ground. Key-medallions connect across the central field to form a bridge between the opposite inner guards. The diamond-shaped medallions have small attached pendants. The border motifs echo the decorations inside the central medallions. Here we can see the carpet as a sophisticated system of combination and variation: an abstract design full of subtle resonancies.



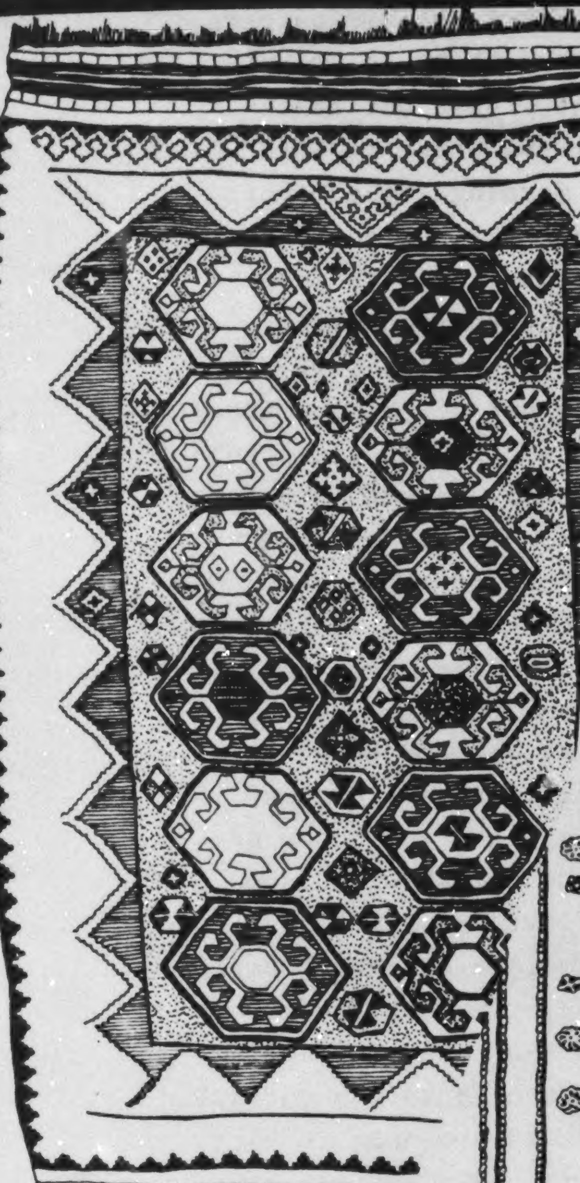
Above: a __Beshir__ rug from the Turkoman tribe of that name. Octagons are a common feature of these works which integrate Turkoman and Afghan designs: the nomadic Beshir live in a border region touching Turkmenistan and Afghanistan. In other versions of the carpet, the four smaller octagons occupy the corners of the central field. In Persia, the central octagonal medallion would by echoed by four corner pieces, each corner being one quarter slice of the central design.

Rugs are made from five basic materials: wool, cotton, silk, jute and animal hair. The most frequent combination is of cotton warp and weft threads and woollen pile - wool woven into cotton. The finest grade of wool is called kurk, which is shorn from the chest and shoulders of lambs from eight to thirteen months old from the high mountain districts. This wool is very smooth, silky and springy, and when it is spun the weavers make many knots per square inch to give the carpet its structural tension. Other wool comes from sheep with a full fleece. This is washed in water with a little lime to get rid of impurities and then combed, sorted and spun into yarn - either single ply, or two balls of wool are twisted together to make a stronger two-ply yarn.

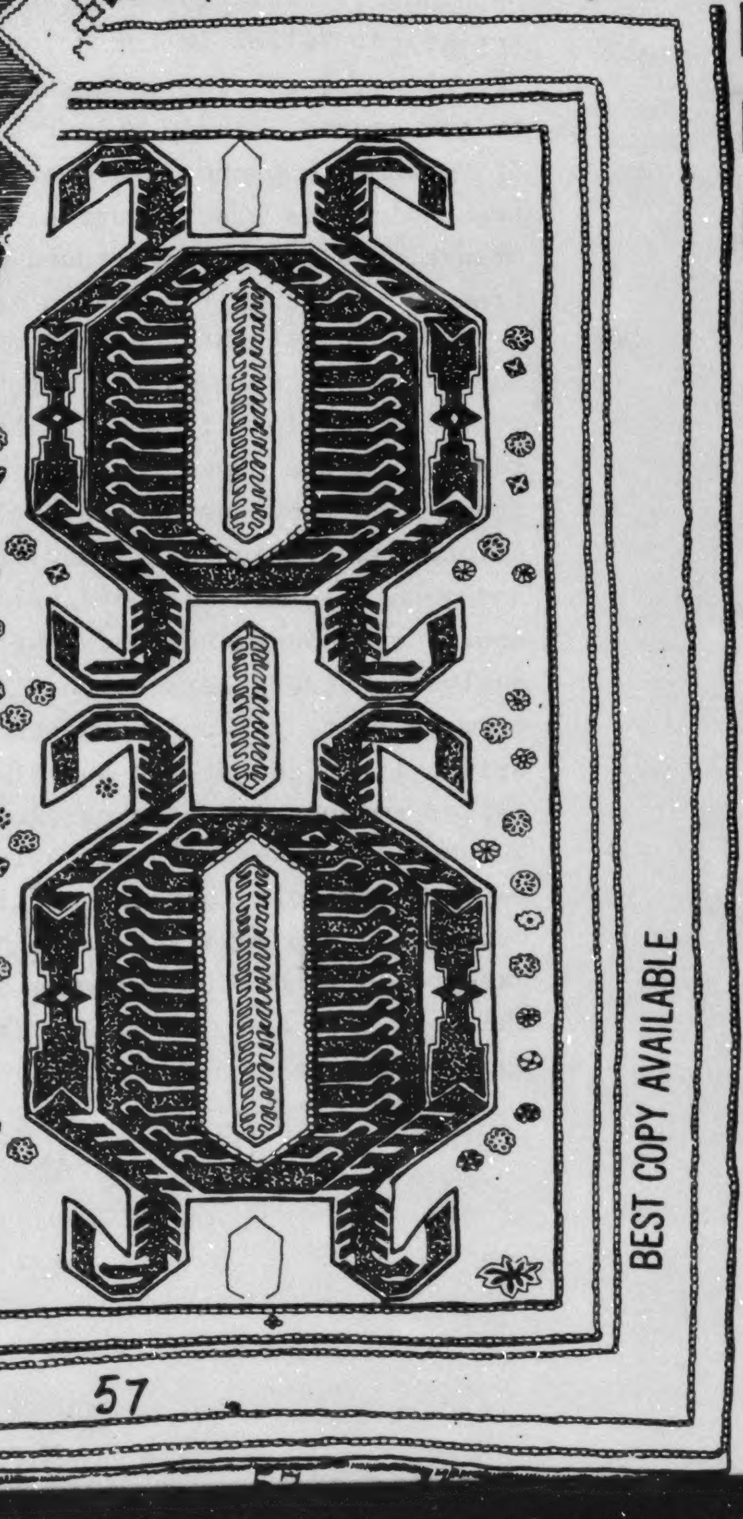
COLOUR

The yarn is dyed either by the weavers themselves or by a master dyer in a village or bazaar. Since the invention of aniline dyes in 1856,the art of dyeing using vegetable and animal substances has diminished. Artificial dyes had a deleterious effect upon carpet production : they were for a long time prohibited in Iran since their lack of subtlety and radiance,and tendency to fade quickly,depressed the market. Today the synthetic colours are much improved,and at the same time the older,natural art is still practised. Wild madder root is used to make the various reds : the older the plant,the deeper the shade of red. Crushed cochineal insects make a bright magenta or a brilliant crimson when boiled in the dye vat. To make the vivid Turkey red,madder is mixed with milk which has been fermented for exactly thirty days. Ox blood is used to make brownish reds. All the vegetable-dye blues are made from the indigo plant. The depth of colour depends upon how often the wool is dipped into the dye to which fixatives such as honey or dates have been added. The crocus,vine leaves,milkwort and buckthorn, walnut shells and pomegranate skins which are used to make carpet dyes also contribute to the floral iconography of pattern : the natural world which provides the carpet's colour is depicted there.

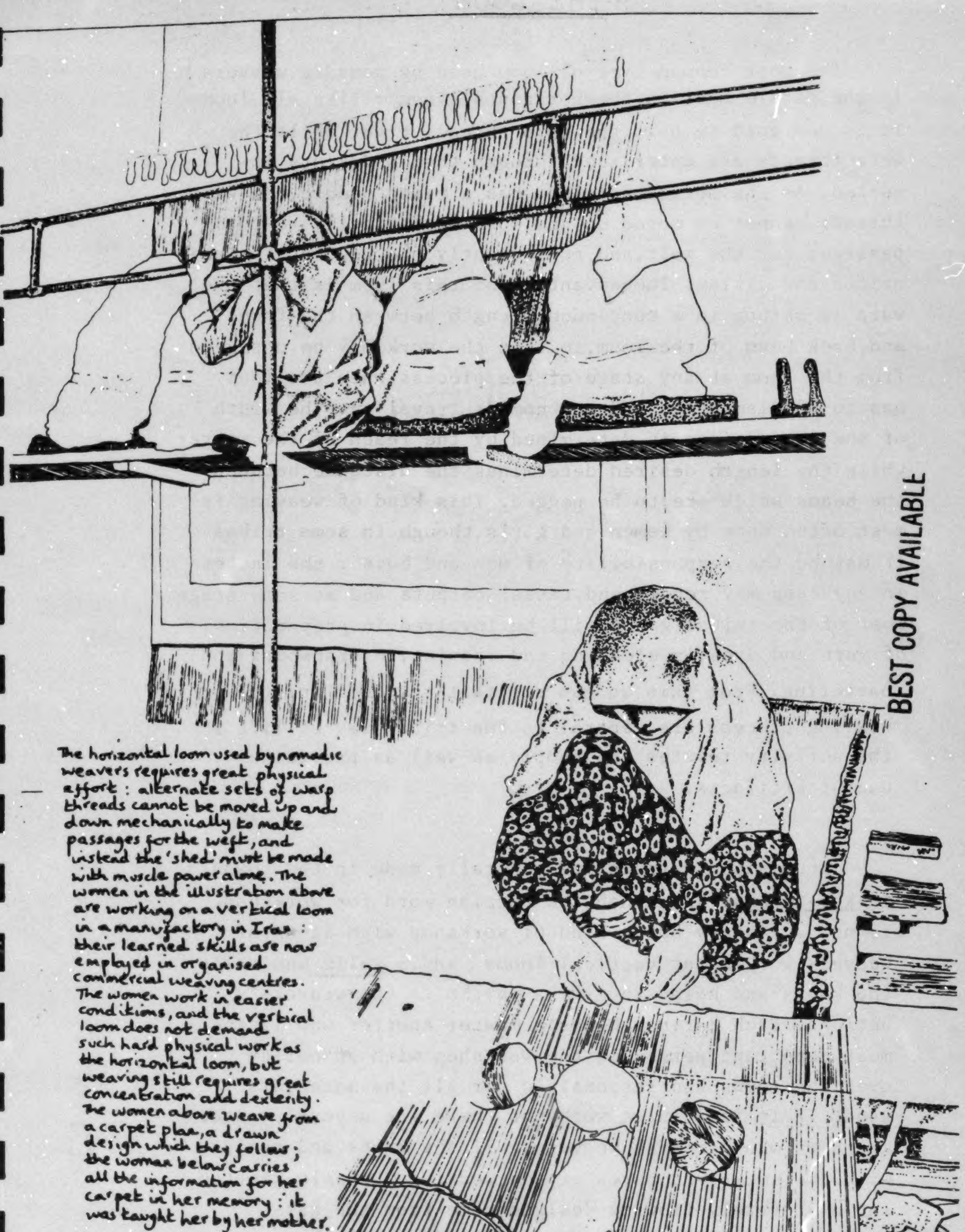
The symbolism of the colours in Islamic carpets varies according to the importance of those colours which are available in different areas; but it is possible to make a general picture. White is both peace,purity,and the colour of morning. Blue is tranquility,associated with the night sky,reflections in water,eternity,thoughfulness,meditation,high ideals and spiritual oneness. Red,on the other hand,is a powerful,energetic colour signifying great joy, happiness,vitality,passion,and other outgoing characteristics. Yellow is the colour of the sun and stands for glory,plenty,the riches of active power. Green is the sacred Islamic colour since it was the colour of Mohammed's banner,and the colour of the cypress tree which was his favourite, being eternally green. Orange,used as the background colour in marriage-tree designs signifies human love. Colours take on a particular significance through use and association. For example,purple is the colour of royaly because it was traditionally worn by the Shah; and so by extension purple comes to symbolize dreams which come true - the fabulous made a reality. The Sufis developed colour association and symbolism into a highly complex and sophisticated metaphysical system. But the emotional appeal of colourtranscends even the beauty of Sufi analysis. Strong dark colours are used in the hot arid climate since all colour appears much weaker in very bright light,and at the same time these colours give relief to sun-tired,sun-dazzled eyes. Further,certain colours are powerfully evocative of a particular place, as with the soft tourquoise colour found without exception in Qum rugs,either in touches or as an entire background : this is also the colour of the rooftops in the holy city,and this exact shade of blue does not appear elsewhere in the cities of Islam.



A kelim from Shiraz, left, made about 1890. Shiraz is a marketing centre for the rugs made by the nomadic tribes of South Iran. The hooked motifs in the hexagons of the central field are stylized versions of the tarantula spider, a motif which is also found on Turkoman rugs and in other areas. The kelims from the Kurdish village of Diyarbakir are woven with similar hooked motifs which are in fact scorpions, included in the kelims as a kind of charm, to ward off a recurrence of a plague of scorpions which once occurred in Diyarbakir.



Right: detail of a rug from Lenkoran on the Caspian Sea which features the tortoise motif. The tortoise is one of the four divine animals of India and in Islam too it has great significance: people who live to an old age are considered to be Allah's favourites and the tortoise both symbolizes a long life and is regarded as a lucky charm. It is an image of respect and dignity.



The horizontal loom used by nomadic weavers requires great physical effort: alternate sets of warp threads cannot be moved up and down mechanically to make passages for the weft, and instead the 'shed' must be made with muscle power alone. The women in the illustration above are working on a vertical loom in a manufactory in Iran: their learned skills are now employed in organised commercial weaving centres. The women work in easier conditions, and the vertical loom does not demand such hard physical work as the horizontal loom, but weaving still requires great concentration and dexterity. The women above weave from a carpet plan, a drawn design which they follow; the woman below carries all the information for her carpet in her memory: it was taught her by her mother.

THE LOOM

The most common type of loom used by nomadic weavers in the Middle East is the horizontal loom : like all looms it is designed to hold the warp threads tight while the weft threads are interlaced through them and knots inserted. As the horizontal loom has a fixed heddle,the warp threads cannot be moved up and down mechanically to form passages for the weft,and consequently the process is laborious and tiring. The advantage of this loom is that the warp is strung in a continuous length between the front and back beam of the loom,so that the work may be unpegged from the loom at any stage of the process,when the loom has to be dismantled and the nomads travel on. The width of the woven piece is determined by the reach of the weaver while the length desired determines the distance between the beams which are to be pegged. This kind of weaving is most often done by women and girls,though in some tribes it may be the responsibility of men and boys : the latter in any case may repair and tassel carpets and at some stage most of the tribal group will be involved in preparation of yarn and dyes,in cleaning and ironing,in transport and bartering. From this we can see that the loom and the weaving process are central to the tribal way of life : the activity relates the people as well as providing useful artifacts.

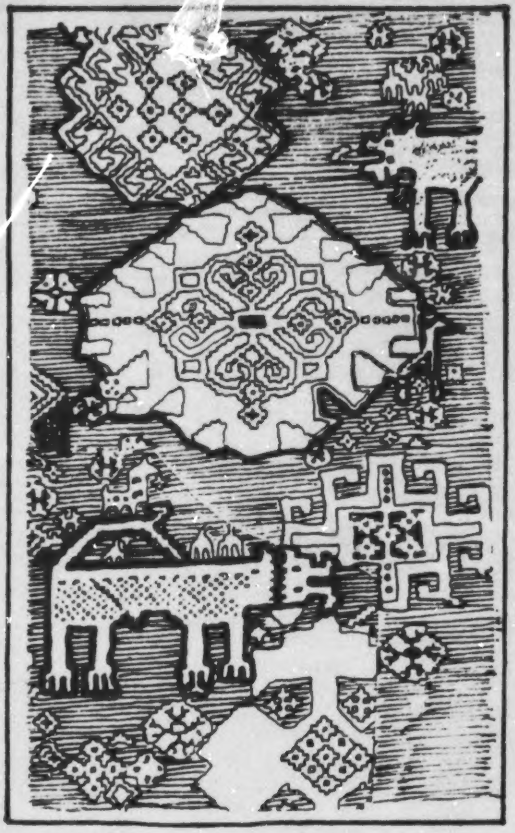
Room-sized carpets are generally made in the towns in kar-hanehs. Kar-haneh,the Persian word for workshop, is not a factory but a kind of workshop with lines of weavers working at vertical looms and a salim who calls the knots and helps to give a rhythm to the weavers' actions. Each kar-haneh has a master knotter who is the most important person in the workshop with authority over the looms and responsible for all the materials used. If it is a large workshop there are several master knotters who hire the weavers,call the knots,and assist with the important parts of the weaving. Densely knotted and elaborately flowing designs come from the kar-hanehs,with 300-500 knots per square inch. Such work can include perfectly woven circles,impossible on horizontal tribal looms where the lower knot count of 90-150 creates stepped weaving designs.

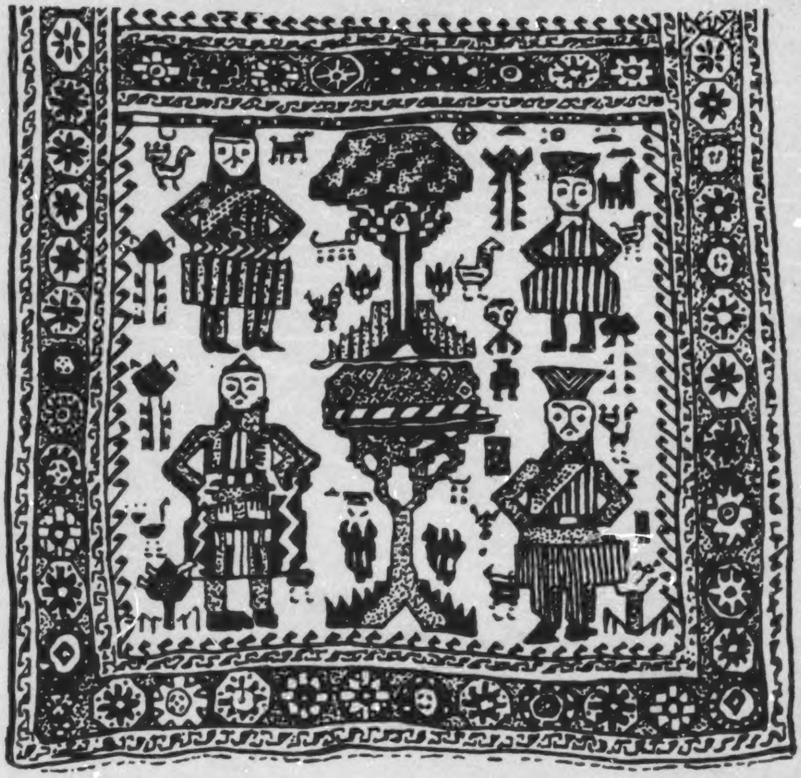
BEST COPY A

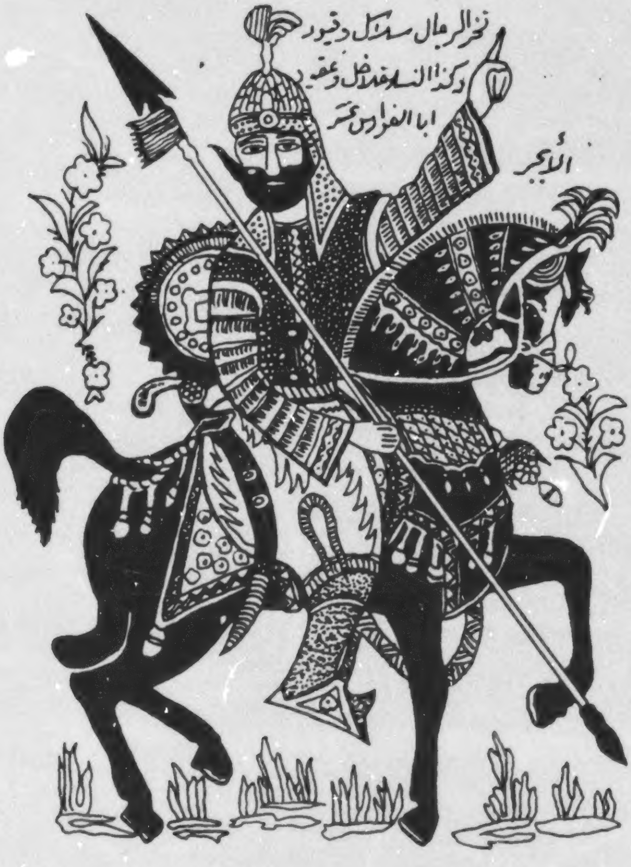
Traditional tribal patterns are passed on from mother to daughter,while in the bazaar there are carpet designers who refine designs and even invent new ones. This practice is related to the development of arabesque carpet design by book illustrators in 16th century Isfahan,when new kinds of carpet design were made for Shah Abbas and the royal courts. This transposition of a drawn design - a carpet cartoon - into a carpet is made as a kind of graph which shows the different areas of coloured knots required : these drawings are cut into strips and each strip tucked into the warp threads when it is required,the weaver looking up to follow the drawn instructions. We can see that this is quite different from the tribal memory procedure,just as the hierarchy of the kar-haneh is socially distinct from group tribal activity. The pattern diagram is not only bought in the bazaar,it is to some degree an invention outside the history of the family group,a quite different relation being made between pattern and people : the inventor becomes a customer.

MOTIFS

The role of picturing is subservient to composition in Islamic design : figurative motifs work as parts of a system. At the same time,certain devices which may seem quite abstract,such as the Swastika,Circle,Star, Cross and Diamond,have symbolic meaning,sometimes culturally specific and sometimes carrying a number of associational meanings. The mihrab,the Khamsa.the hanging oil lamp,the water jug - all these have acquired religious meaning in Islam through direct reference to ritual and mosque. Other motifs are more ancient,such as the Tree of Life which is found in many parts of the world; but again,in Islam this image is bound up with a special history and geography,deriving from the story of the Tree of Life in Ancient Assyria : a mystical eagle landed on the Hoama,the Paradise Tree of Life,breaking branches and scattering seeds. This image symbolizes the scattered people of the Islamic world,who are seeds of the same tree. To taste the juice of the Hoama is to become immortal and the tree which links Islamic people is the Moslem faith with its five branches as depicted on Hajj murals symbolizing the Five Duties. Tree of





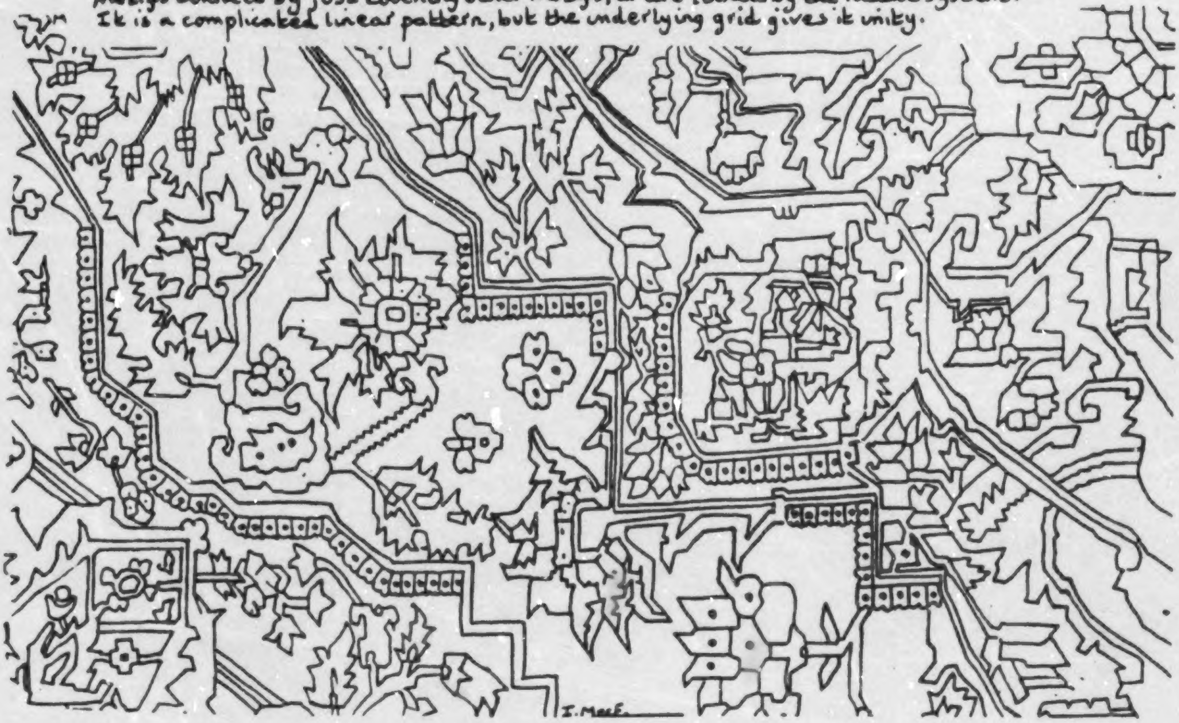


Above left: detail of a rug made by the Qashqai tribe in the second half of the nineteenth century. The stylized lions and peacocks which feature here have had a place in the Persian artistic traditions of both tribal and court culture for many centuries. The weavers of this rug may never have seen a real peacock, but they were still able to picture them, drawing upon folk stories and images from carpets made by previous generations. Although it is thought that lions did once live in the mountains of South Persia, here, like the peacocks, they too are imaginative creations.

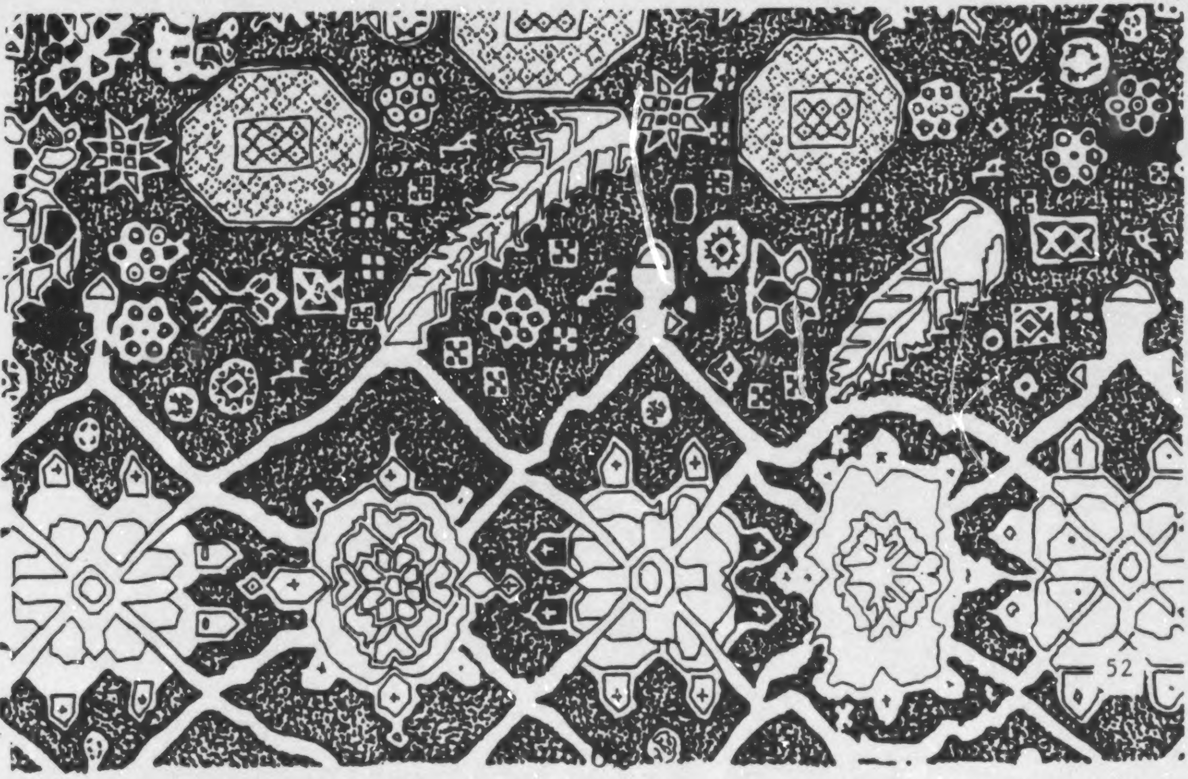
Above right: detail of a Qashqai pictorial rug which illustrates a folk story. There is no narrative action in the picture, but the characters in their patterned finery, and the trees and animals of the tale, are all clearly presented: the story could be told while the fruit tree, the chieftain, and the peacock were pointed out.

Left: a miniature of Antar, a hero of Islamic folklore. An Arab warrior of the sixth century, stories about Antar are told from Fez to Baghdad — stories which inspired the age of chivalry in medieval Europe. One compilation of the tales of Antar, published in Cairo, runs to 32 volumes. Figurative carpets made by Bedouin tribes depict incidents from the life of Antar in stylized form. Antar himself exemplifies qualities dear to the Bedouin: both love of freedom and loyalty to clan and tribe. Antar was a brave fighter, but also a poet who bowed to the power of love.

In this 19th century floral carpet in a geometric style, from Heriz, angular branching motifs connect by just touching other motifs, or are linked by the lattice system. It is a complicated linear pattern, but the underlying grid gives it unity.

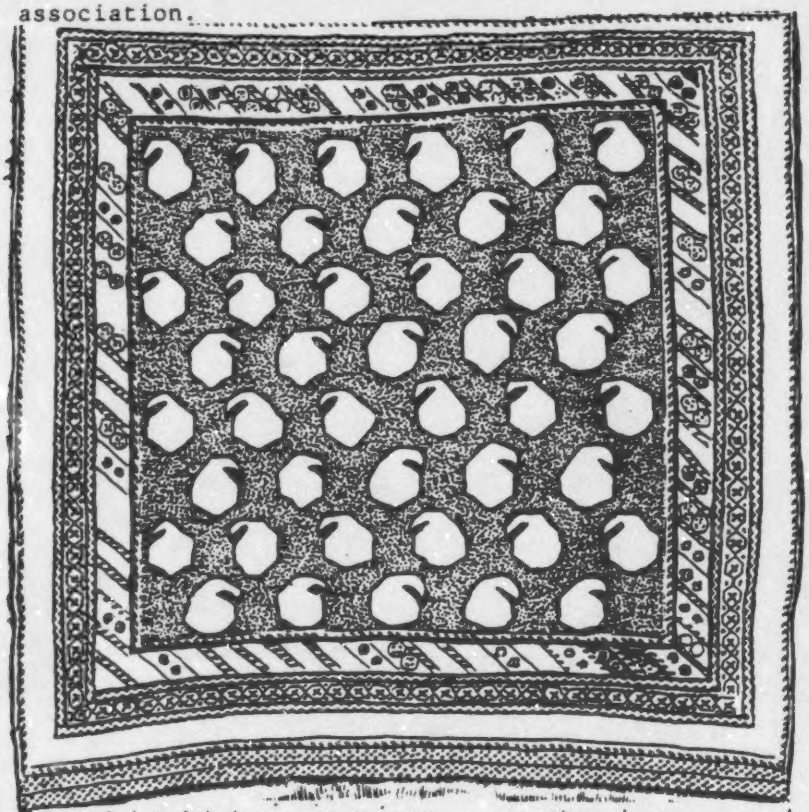


In this 19th century Karaja carpet from northern Persia, some floral motifs are connected by a lattice, whilst others are scattered over the ground: both systematic arrangement and improvised space-filling contribute to the final pattern.

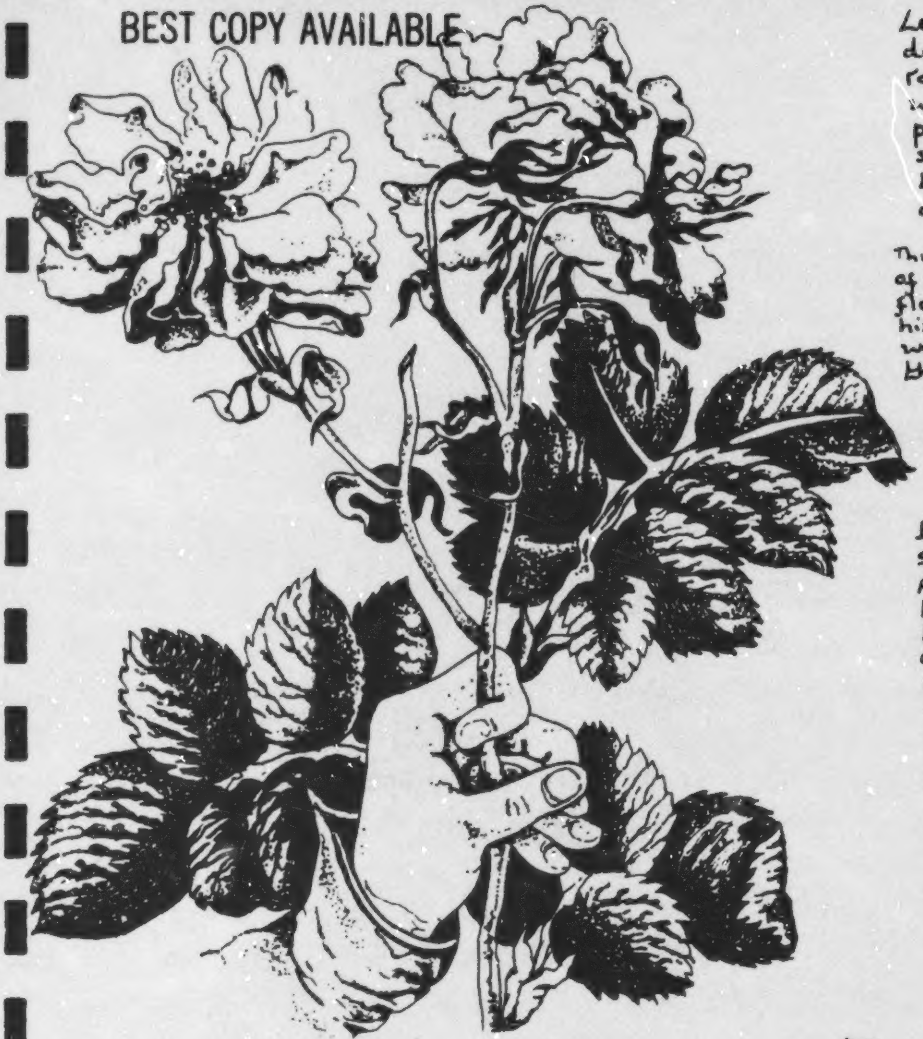


Life prayer carpets from Tuisserkhan in the Alvand mountains show the tree with tiny human figures as its fruits,making this interpretation clear.

As well as the tribal gül which is an emblem of the group and also works as a form of protective magic,carpets in Islam are covered in flowers - gardens for deserts where there are no flowers,and reminders of the Gardens of Heaven described in the Koran. The carnation,the tulip, the lotus,the lily,the rose,the chrysanthemum,together comprise a kind of 'language of flowers',bound up with the secrets of the dyer's art,and with tribal medicines and potions. The mir-i-boteh motif means 'princely flower', just as gül is etymologically derived from 'flower' in Persian. The mir has many interpretations : it is a flower,a flame,a seal hand-print,the pattern of the jewels in the Shah's crown,a winding bend of the Indus River,the pattern of a Kashmir shawl,a cypress tree,a fir cone,half of the Chinese Yin-Yang symbol. Found throughout Islam,the mir demonstrates how pattern may be endless not only as a visual experience,but symbolically too, with motifs which may be endlessly interpreted through association.



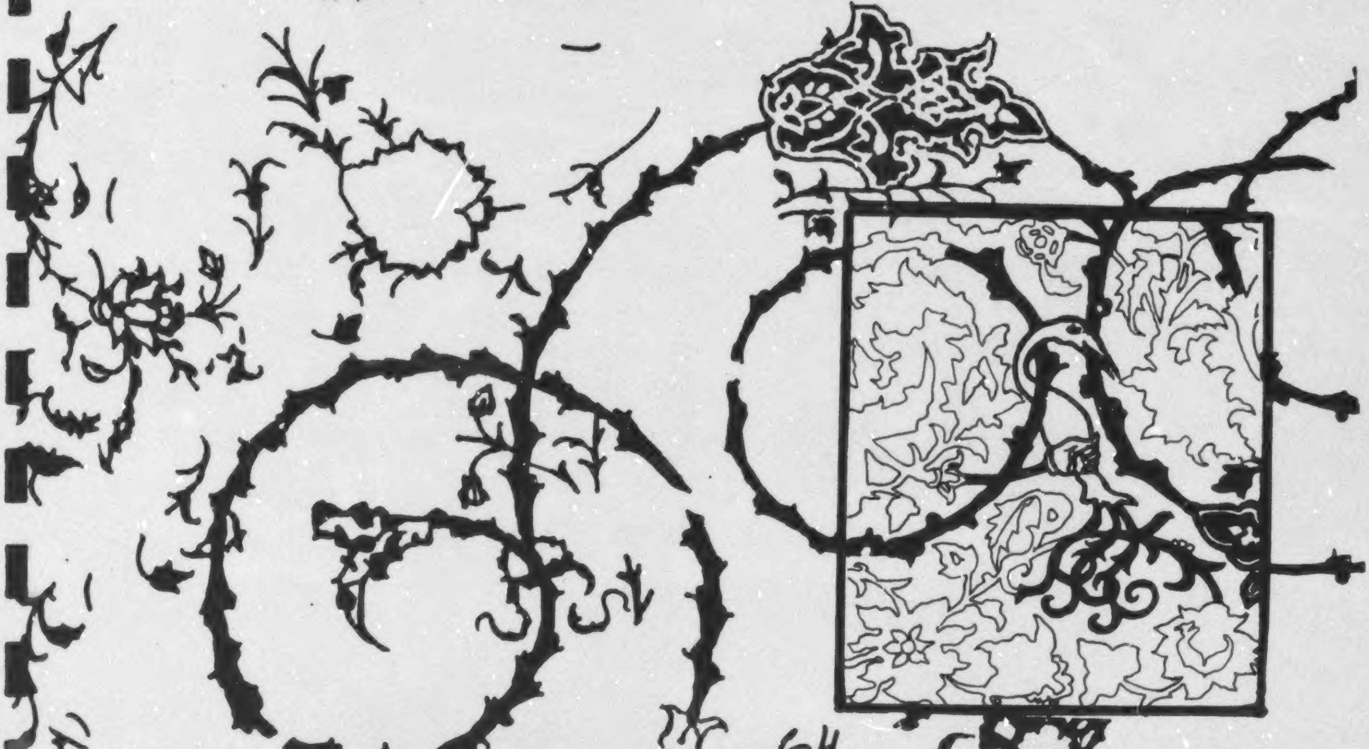
The mir-i-boteh design fills this pile rug from the Kirman area of Southeast Iran, well known for its Kirman shawls which feature the same symbolic motif.



Left: this 19th century Persian drawing of a hand holding a rose expresses the vitality which even a cut flower possesses: in the branching stem of a natural form lies the art and method of the arabesque design.

This drawing is by Lutf 'Ali Khan of Shiraz, (1797-1869), the foremost flower painter of his time. Some of his watercolours of sprays of roses were copied in painted lacquer by the mirror makers of Persia.

Below: the arabesque is both systematic and visually complex. As the eye follows the regular branching design it is continually lead back to the same points, only to spiral out again: the system is dynamic, and the profusion of curves, crossing and spiralling, cannot be disentangled. A repeated motif in 19th century Isfahan carpets is that of a hand emerging from a branch to grasp a phoenix bird, the symbol of happiness. But the bird's beak is fastened around another branch, its neck curled around another: to capture happiness is as difficult as the arabesque is endless.



COURT CARPETS

Carpets in Islam may be classified according to the conditions of their production. The four general categories are : Tribal; Cottage industry; Workshops; and Court. The Court carpet was made by weavers working with illuminators of manuscripts and books : this must have arisen from a desire to create carpets with the kind of intricate,intertwined detail familiar from patterned Korans. This must be seen as applied design,the art of the book being transposed to woven fabric. Shah Abbas the Great (1587 - 1629) replanned and rebuilt the city of Isfahan with his architect and engineer Sheikh Bahai from 1597 : the new,splendid buildings,and the restoration of the Friday Mosque and the Minaret of Ali,created a need for carpets to adorn the interiors. Shah Abbas brought skilled weavers to the city, where they lived in a special district; they were to create carpets of a quite new type,splendid arabesque works with twining foliage and elegantly drawn animals. This enterprise,though its results were unique,was prophetic of the way in which demand would lead to the organization of large manufactories working on planned designs. The new bazaar route lead for over a mile between the Friday Mosque to the Maidan-i-Shah,and incorporates to this day the bustle of business in hundreds of small shops,with arched entrances leading to the mosques, little gardens and open squares,'havens of tranquility'. Here the trade in tribal and cottage industry rugs thrived under Shah Abbas' reign as the city grew wealthy. The picture is one of commercial rug dealing in the bazaar,whilst in the Chahar Bagh,the formal 'Four Gardens' which follows in straight lines the twisting and turning axis of the bazaar route,the carpet was laid out for relaxation,meditation and prayer in the garden pavilions. Some of Isfahan's carpets reflect the systematic,formal planning of the Chahar Bagh; whilst others with their interlacing arabesques recall the dynamism of the bazaar route. Saeb,court poet to Shah Abbas,described the city of Isfahan at this time :

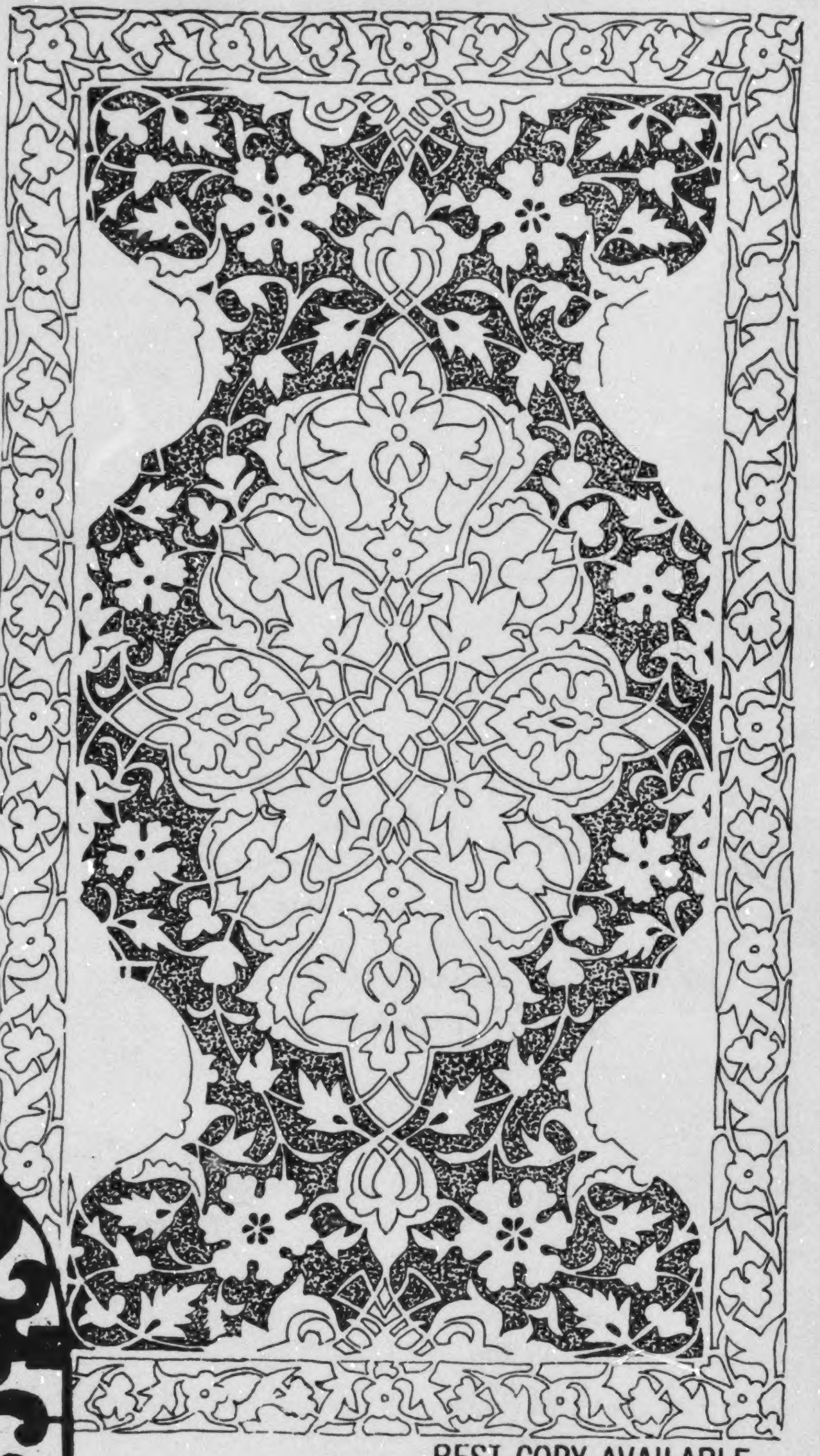
'Each of its bricks is as valuable as a treasure,its jasmine gardens dawning in the heart of the night.' The Court carpets produced in 17th century Isfahan must owe much of their poetry to the excitement of the magnificent new city,as well as to the inventive nature of the new designs. Today one may still stroll through the bazaar and the gardens,and re-enter the worlds of commerce and meditation in nature,distinct and yet both essential to the carpet. Shopkeepers display tiles,carpets,jewelry,brassware and block-printed textiles which in their great variety of patterns testify to the importance of pattern in Islamic culture at all levels of artistic production. And the formality of the ceremonial avenue of the Chahar, flanked by its ordered gardens and the systematic course of streams,reveals much of the essential taste in the garden carpet.

The influence of engraved mirror designs,paper appliqué wall coverings,and stencil printing should not be overlooked : they too demonstrate how the gathering together of flourishing crafts leads to the exchange of designs,both in a determined way and unconsciously. We can say that the arabesque form,in mirror glass,on a page of the Koran,in an Isfahan carpet,on the wall of a residence,is the pattern form which transcended the limitations of all media to become one of the main contributions of Islam to design.

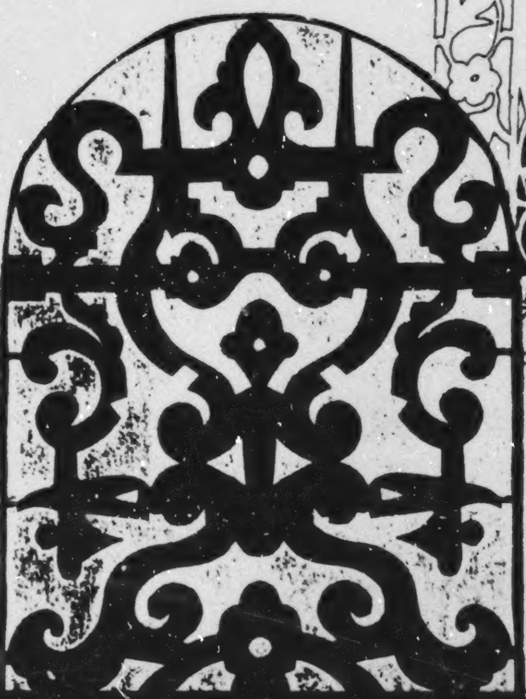
The carpet is made by hand,and in a world of technological expertise the survival of the art must come through a recognition of the distinction between craftwork and mechanical process. This recognition does exist,both in the West and the East,so that the changes in colour of a dyed wool,the improvisation and deliberate mistakes of the weaver,the particular tension of the warp in a piece,are seen to establish uniqueness as both a crucial aspect of the aesthetic experience,and as an investment value. Hand weaving has survived the invention of the power loom,aniline dyes,and now computer technology : this is due to both increased awareness of the beauty of carpet pattern in Islam,and to the financial value now attached to a labour-intensive process.

Right: an Arabic cut-out and appliquéd paper wall covering from the 18th century. The art of paper cutting was cultivated during the 11th century by the shadow theatres of the Orient. In Turkey during the 16th century there was a craft guild of those 'who made all sorts of carved work of paper.' In 1582, as the guilds of Constantinople filed past the Sultan, the paper carvers exhibited 'a very beautiful garden and a castle decorated with flowers made of multicolored papers, artistically carved.'

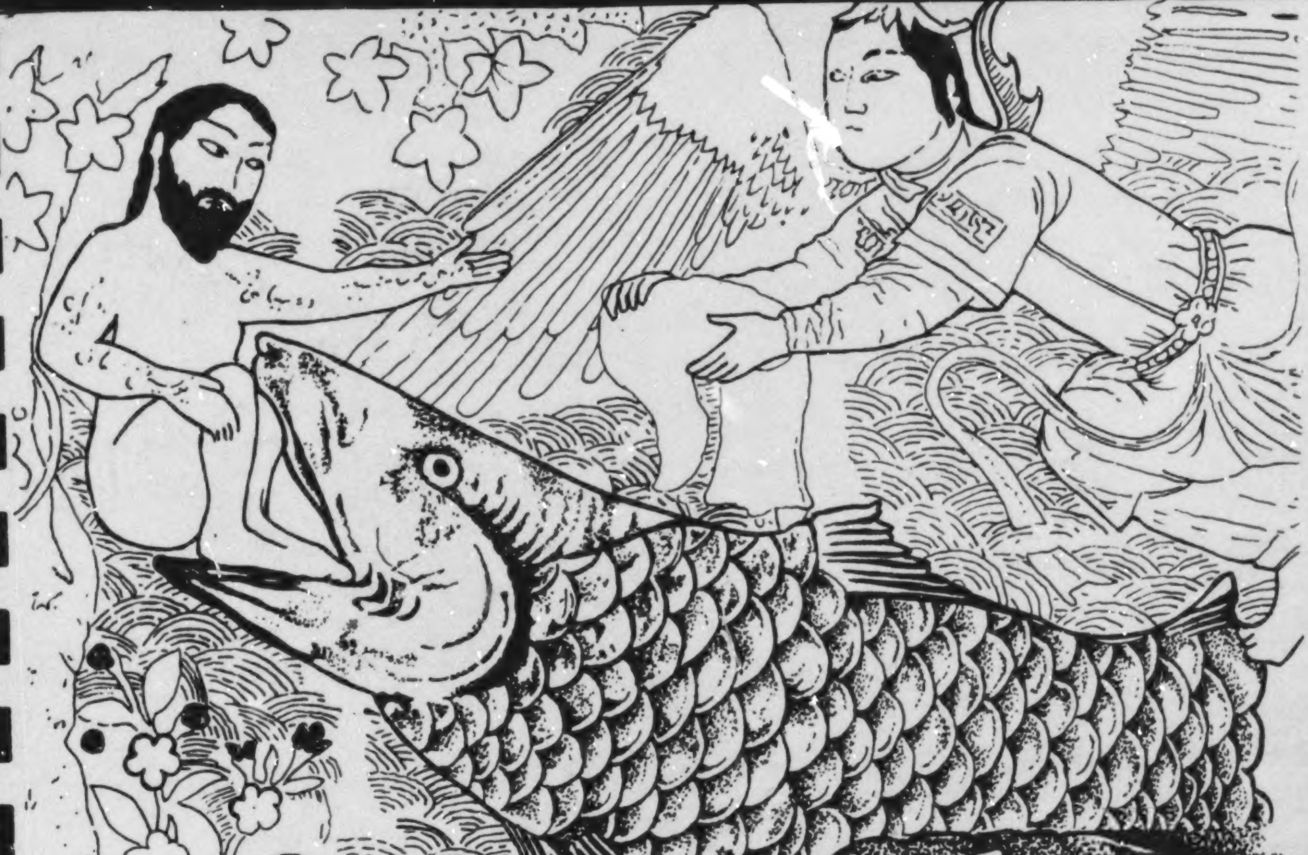
Folding paper squares and rectangles (double-folds and quadruple-folds) and cutting out a design — this technique brings out the essential concept of symmetry in Islamic patterning.



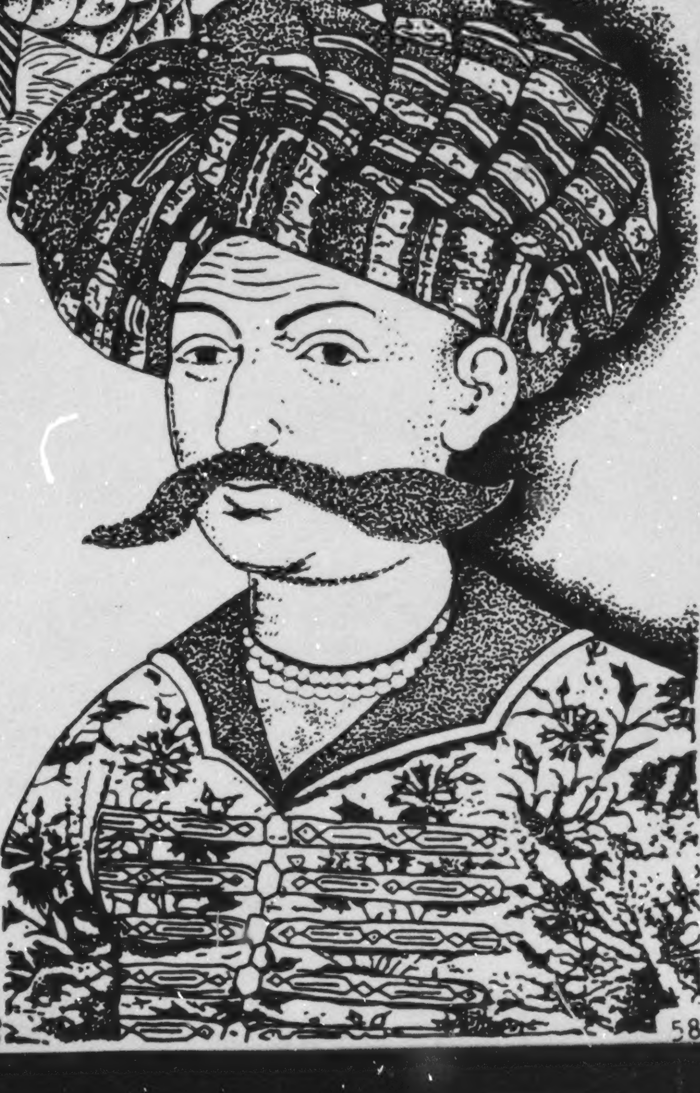
Below: an arabesque stencil. Stencil paintings came to Europe from the Orient and North Africa.



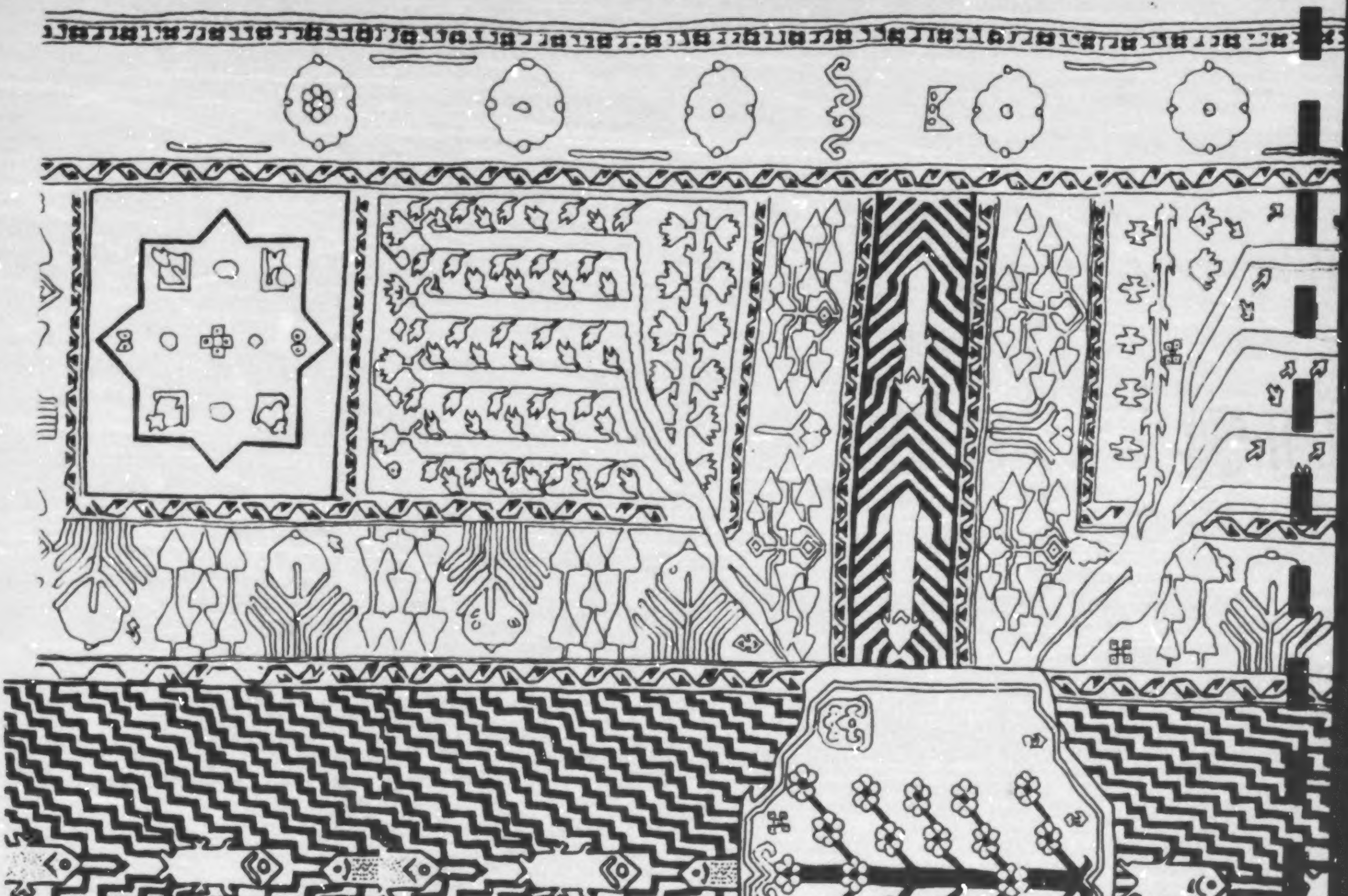
In Europe in the 18th century, craftsmen used thin wooden arabesques as inlaid designs on furniture; at the same time arabesque stencils were used for painting on wood. Stencils may still be bought throughout Islam, either abstract ornaments based upon the arabesque, or motifs for decorating the houses of returning pilgrims



Above: a Persian painting of the story of Jonah and the whale, 14th century. This illustration reveals the stylized approach of the Persian artist towards figurative images: the human form is defined primarily by a single bounding line and the picture is filled with repeated patterning devices. The waves of the sea and the scales on the whale's body allow the artist to employ rhythmical pattern-making. In this case, the pattern does contribute to the drama of the story.



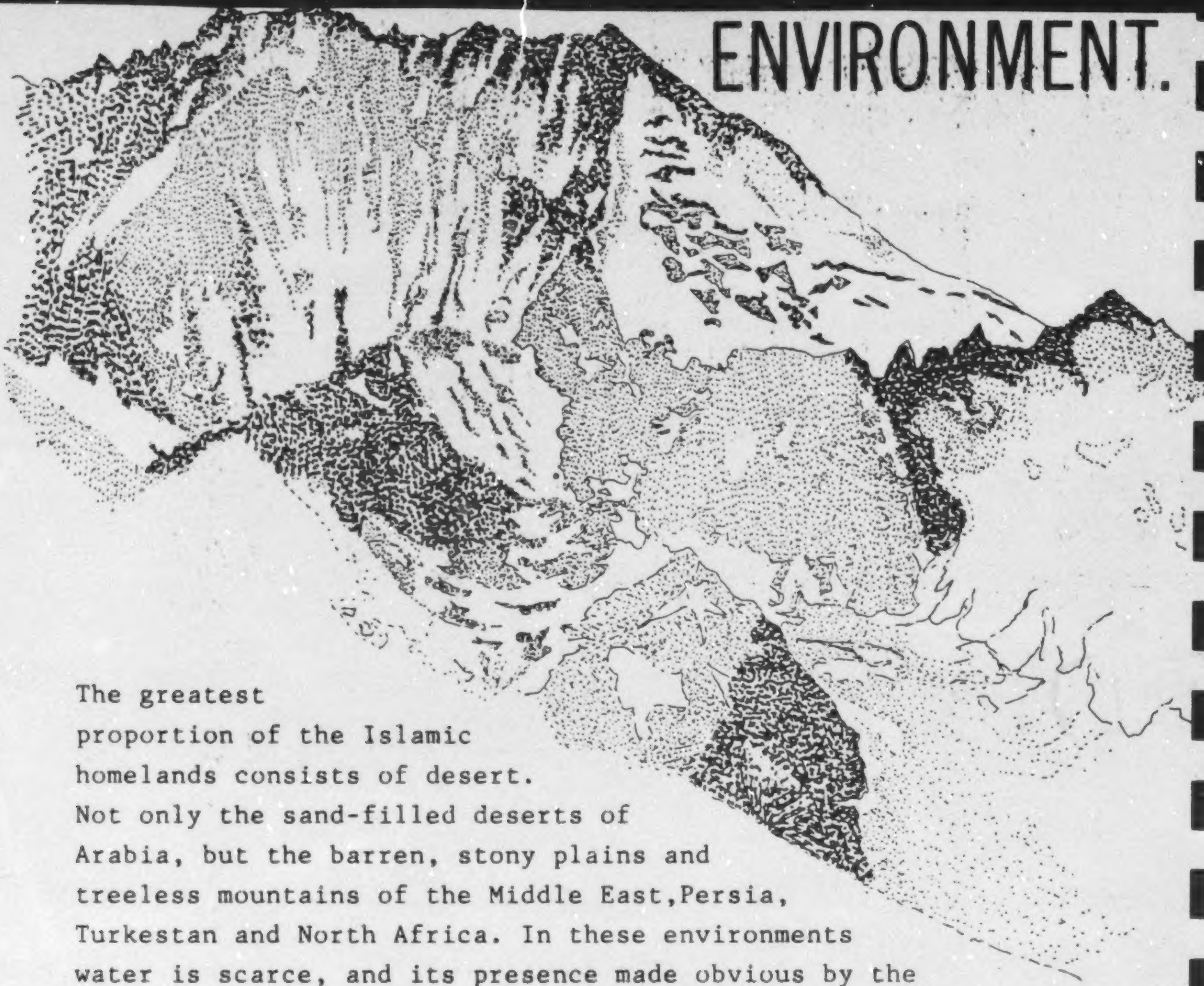
Right: a contemporary portrait of Shah Abbas the Great (1587-1629). It is an image of a powerful and cultured man made despite Islamic prohibitions in regard to representation. The portrait is concerned as much with the patterned finery of the Shah as it is with his likeness: embroidered silks threaded with gold and silver denote the high status of the wearer.



Detail of a large garden carpet (22 ft. long and 8 ft. wide). Although classified as Persian, this carpet was probably made by the Kurds. The carpet is a kind of 'aerial view' of a planned garden, laid out like the plan of an architect and reminiscent of the formality of the Chahar Bagh, the 'Four Gardens' of Isfahan. The water of the main stream is marvellously expressed by a zig-zag pattern where stylized fish swim 'against the current'. The stream contains islands where Oriental Plane trees grow. Pathways and flowering borders complete the scene. To sit or walk on such a carpet is to enter the conceptual world of the Paradise Garden.

ASPECTS
OF
PATTERN
IN
ISLAMIC
TILEWORK.

ENVIRONMENT.

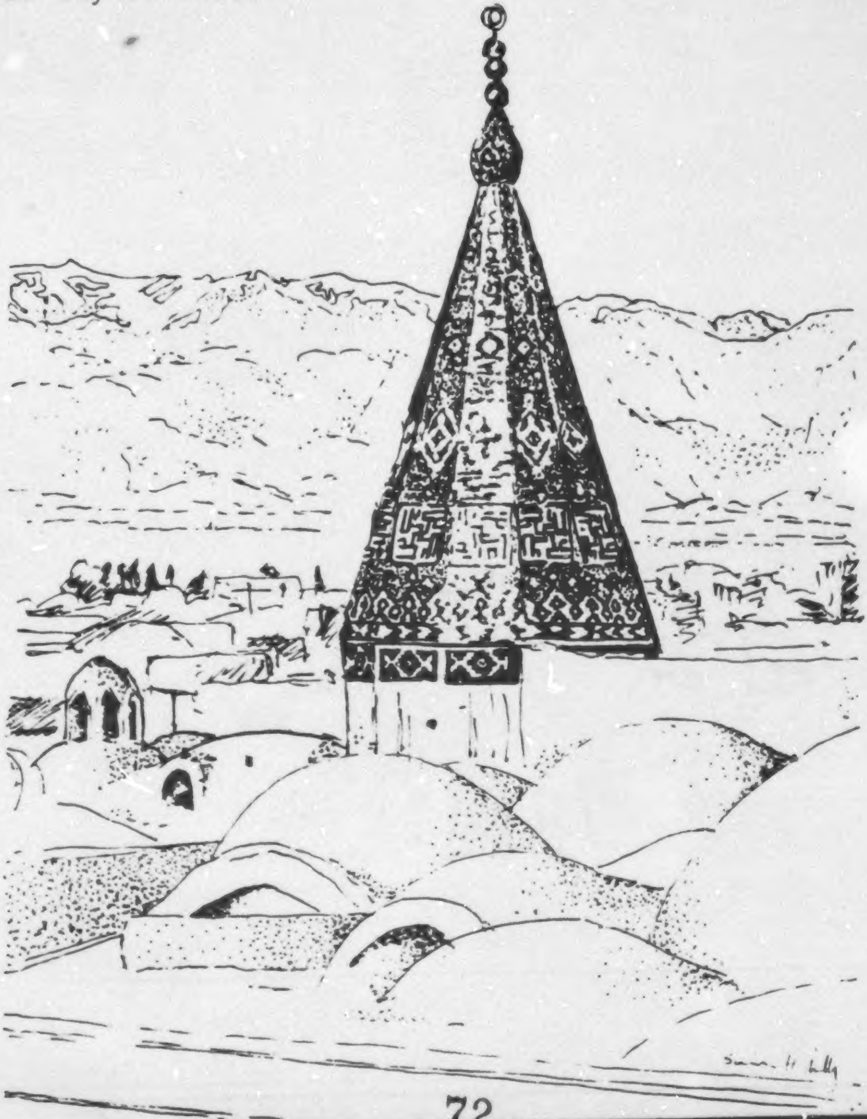


The greatest proportion of the Islamic homelands consists of desert. Not only the sand-filled deserts of Arabia, but the barren, stony plains and treeless mountains of the Middle East,Persia, Turkestan and North Africa. In these environments water is scarce, and its presence made obvious by the contrast of luscious green amid the otherwise dusty greys and browns. In the daytime there is a fierce sun and dry, hot winds while clear skies mean that nights can be bitterly cold.

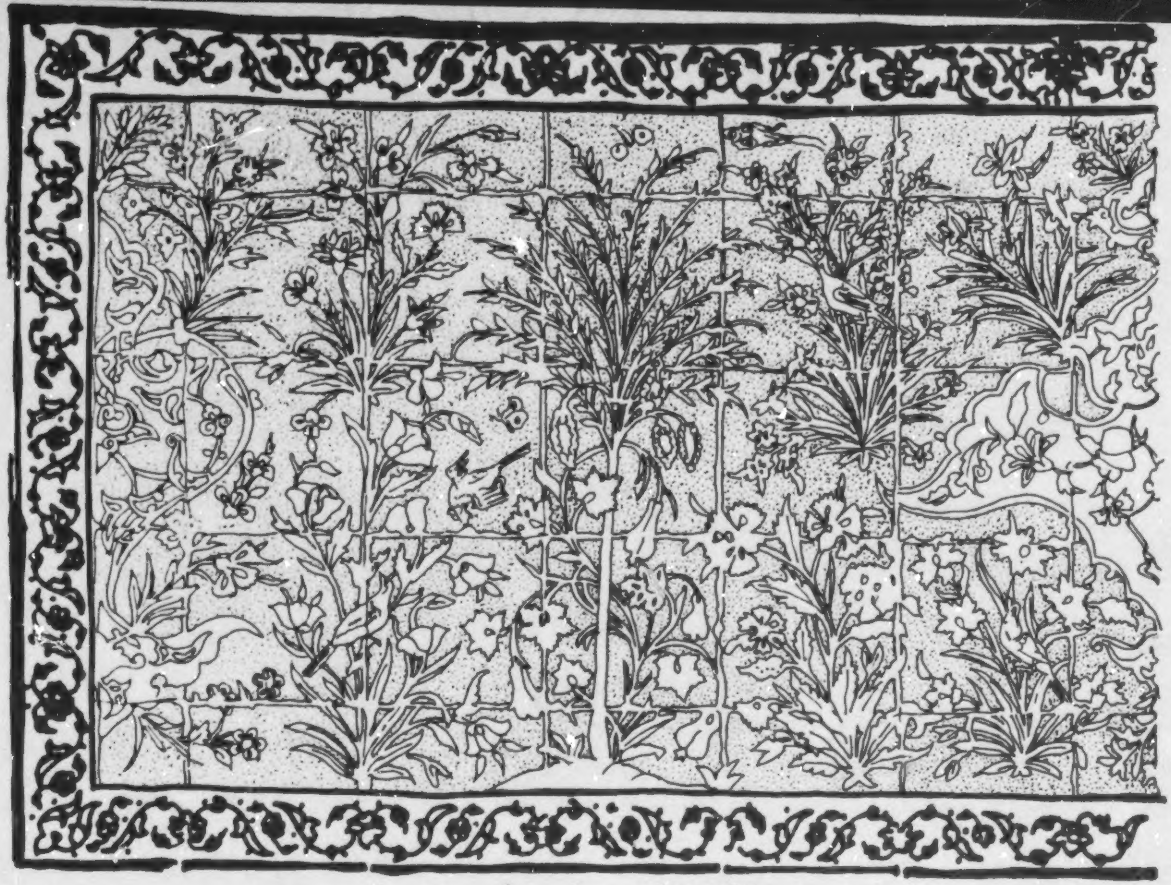
The only building materials in such regions are dried mud-brick, sun-baked clay brick or grey and red sandstone, all of which tend to merge with the background colours. It is hardly surprising that the people of these lands developed a thirst for bright and exciting colours: clothes were made from bold materials,and glossy or irridescent textures were much favoured; everyday objects were similarly enhanced by applying colour and decoration. In such an environment colour was appreciated and explored in great detail: even writing inks were produced in sophisticated and subtle colours such as peacock, purple, rose, pistachio and apricot as well as the more usual range.

How much did the landscape itself affect the use of pattern and colour? For example, why was the earliest use of colour such a striking turquoise blue? Certainly the copper compound required was generally available, and past civilisations had made much use of this. Perhaps though, it is not just a happy accident that this blue is complementary to the natural golden brick on which it was placed, and that it echoes the blue of the clear sky, and is the colour of the plumage of the roller-bird as it swoops and dives for insects in the desert. Yet again, in choosing blue to cover domes there is a conscious echoing of the sky's dome above — made even clearer when star-like patterns are included.

The fact that the central elements of geometrical interlace patterns translate from the Arabic as 'stars' and 'suns' may be a convenient and obvious labelling, but it may also suggest their origin in the star-filled nights of the desert. Indeed the movement and position of the sun and stars allowed the nomads to navigate accurately across the vast, monotonous distances, and were thus very important to their way of life.



The blue-green tiled roof of an Imāmzādah in the hot arid city of Kashan, Iran. In towns and cities where all buildings are of the same material and use the same simple architectural forms, the use of colour on exteriors is the most effective means of identifying the important buildings.

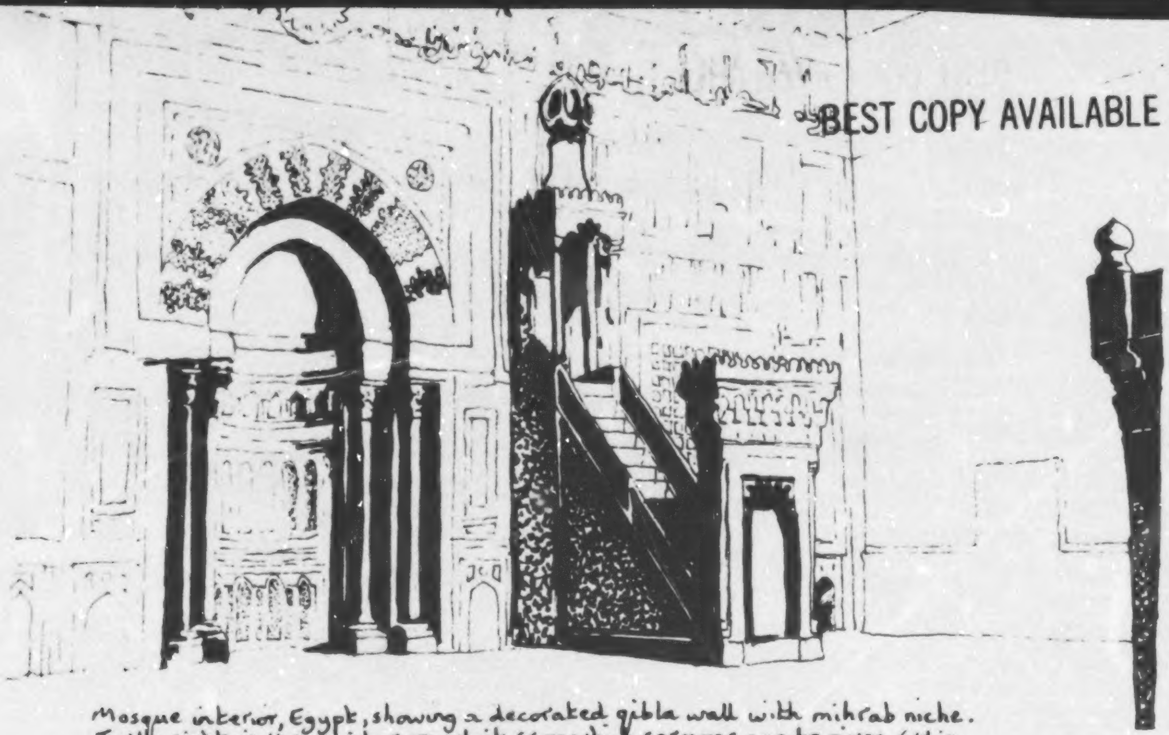


A panel of painted tiles from Isfahan, 1650, showing a Paradise Garden with many different varieties of plants, birds and butterflies. 3' 11¼" high (120cm.)

In order to survive in these conditions it was necessary to solve the problems of use and conservation of water, for it was impossible to rely on the meagre rainfall. So man had to modify the environment: irrigate the land to ensure crops, build aquaducts and sink wells to supply towns and cities. Water becomes the essential requirement for wealth and prosperity, as well as for comfort from the harsh sun and the barren distances, and the garden is the outward sign of this wealth as much as it is a reminder of the promised comforts of Paradise.

The garden was formally planned with geometrically laid-out paths, watercourses that fed the rich vegetation of trees and flowerbeds. Even the less wealthy placed small trees, bushes and flowers in pots grouped around the water basin or fountain in their courtyards.

It is clear that the widespread use of floral patterns relates to this idea of the Paradise Garden spoken of as the reward of the faithful in the Koran as well as with the image of the sustaining oasis and the very old symbol of the Tree of Life.

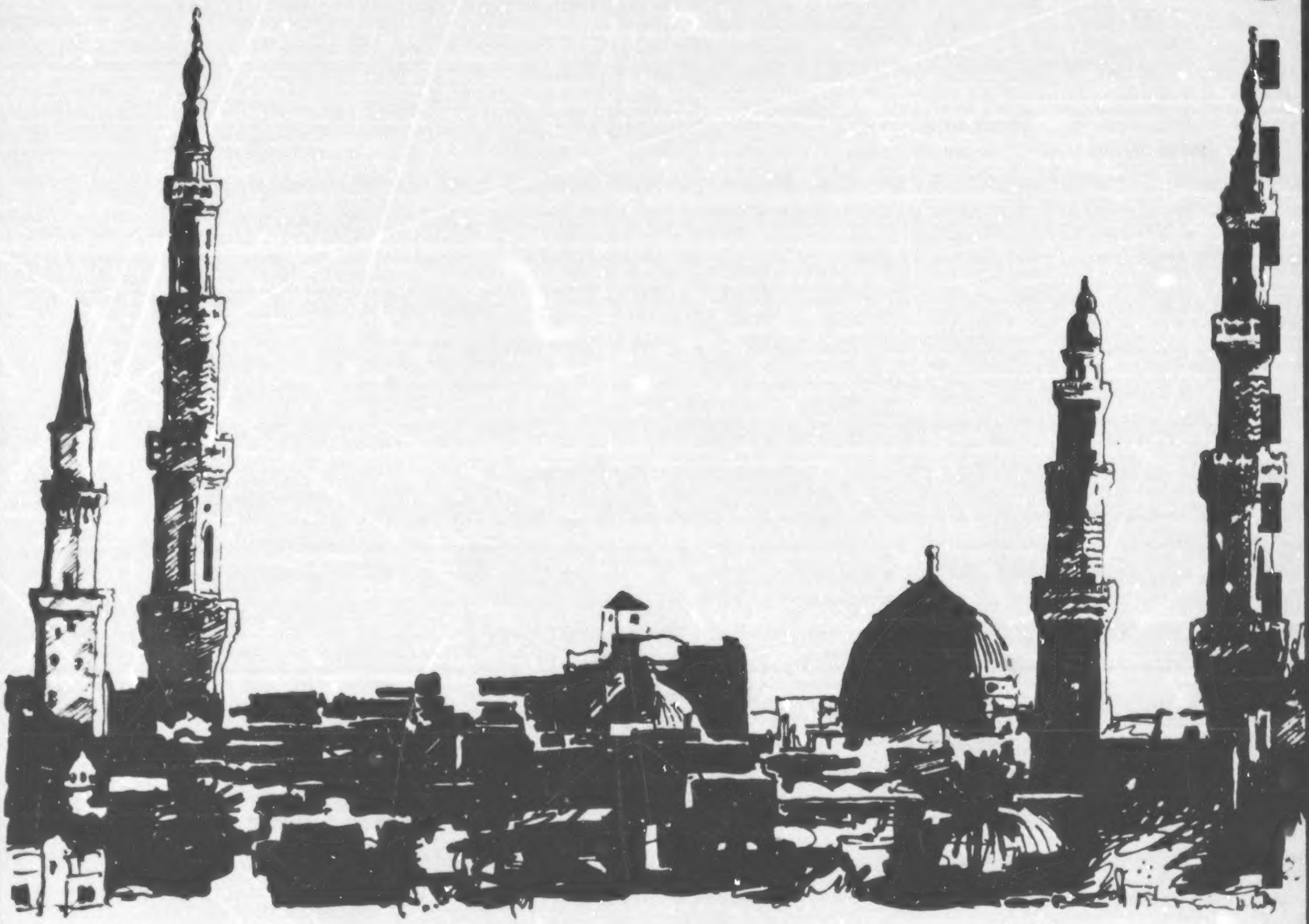


Mosque interior, Egypt, showing a decorated qibla wall with mihrab niche. To the right is the minbar or pulpit from which sermons can be given (this can be found in different places in the mosque).

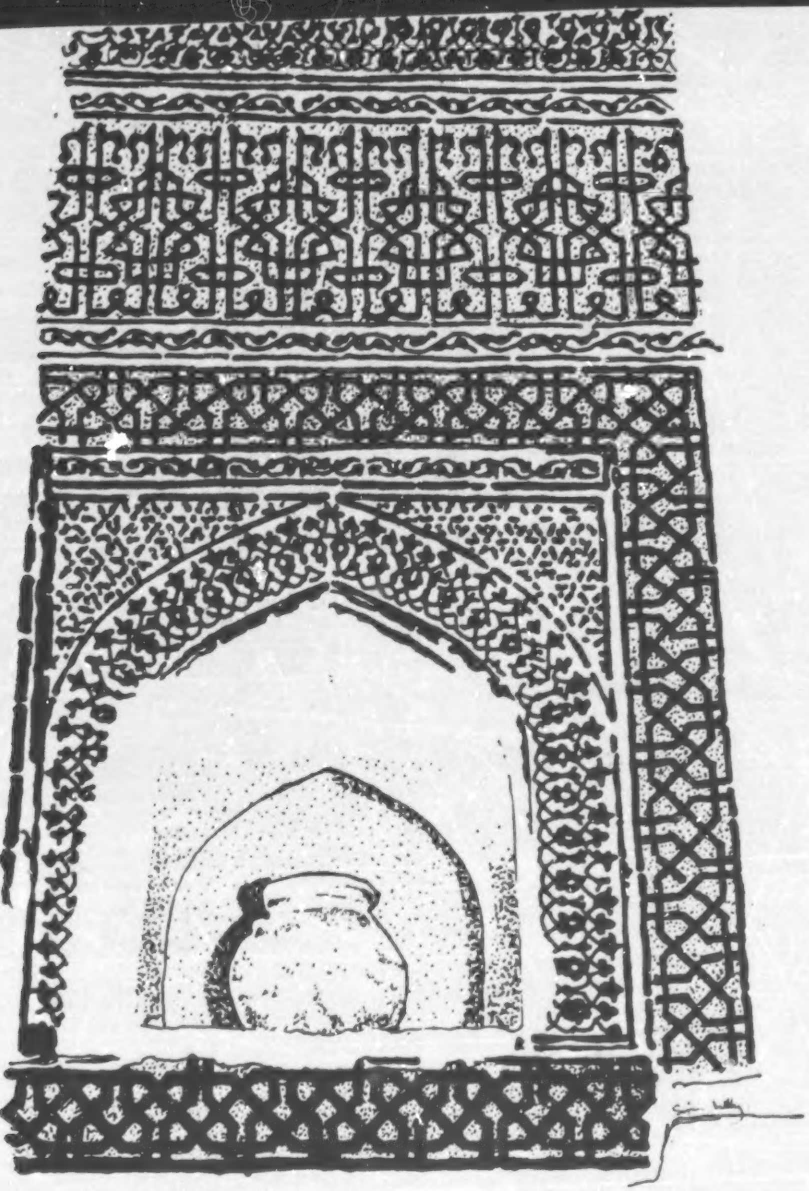
The nature of Islamic culture discouraged the type of individual wealthy dwellings common to 15th century Europe. There was a regularity and simplicity in urban planning. The main visual focus is the mosque which in turn received most of the artistic attention.

The physical as well as spiritual experience of entering the the mosque contrasts profoundly with the outside urban environment: noisy, crowded, hot and odorous, cluttered with market stalls and animals. The ritual ablution, the removal of shoes and covering of the head all go to stress the separation from the everyday world, and upon entering the building the experience of space and silence is immediate and powerful; at once there is a sense of orderliness with the intricate designs on the walls and floors suggesting an ideal beauty and order. So the worshipper, through the unchanging ritual of prayer, places himself within this patterned world as if in preparation and hope for entering the Paradise described in the Koran.

Mosques can usually be identified by the slender tower of the minaret and the domed roof. Though different regions favour particular architectural forms the only essential requirement is a back wall- the qibla that faces the direction of Mecca and is identified by the mihrab niche, symbolic of the presence of God. Because those who are called to prayer line up across the width of the building facing this wall it has to have sufficient breadth and this in turn emphasises the horizontality of the whole of the lower portion of the building. The dome therefore, does not serve as a focus but has the effect of suggesting the infinity of space above. The overall decoration of the mosque interior with patterned wall and floor creates a visual unrest as the eye wanders over the layers of colour without finding a resting point. Once the mind fixes on one layer of design it is at once led off towards another; the attention is focussed but is left free from objectivity, suspended in contemplation within the act of worship.



A view of Medina showing the minarets rising above the city where the Prophet Mohammed is buried. Like Mecca, this city is closed to non-Muslims.

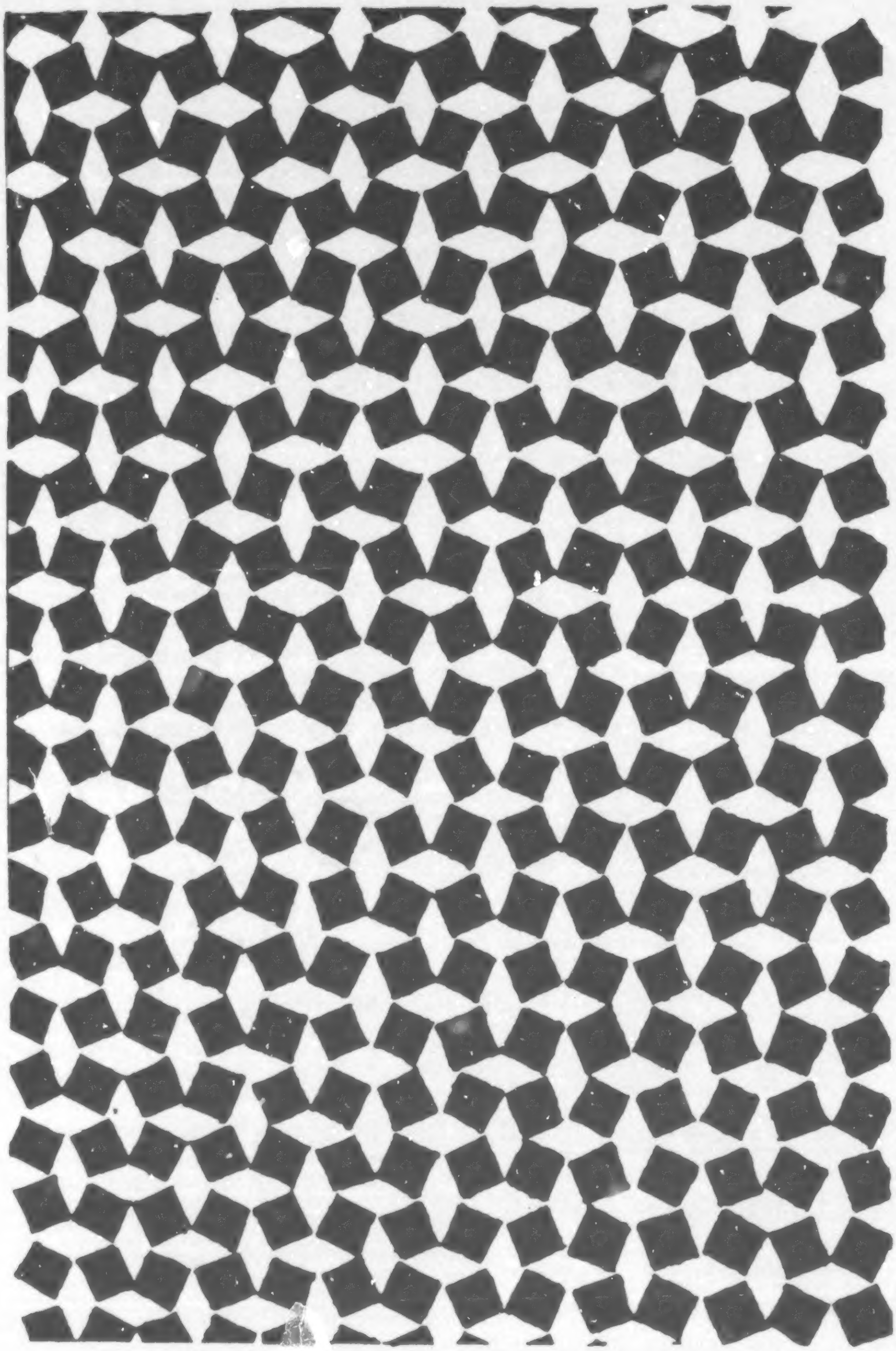


Wall ensemble from Karatay Medresse with knotted Kufic and interlace is the earliest extant tile mosaic in black and white. Konya, Turkey.

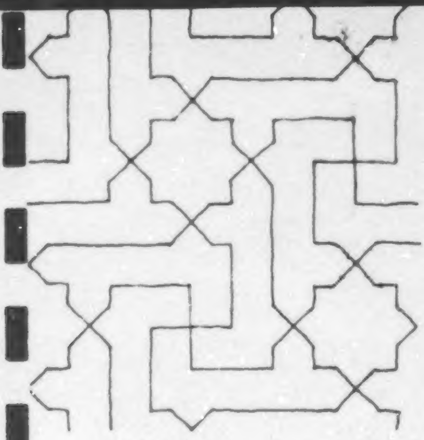
Wall surfaces are subdivided into layers of design, each echoing elements of the other. The main features of the decoration relate to the principal structures of the architecture.Thus calligraphic bands follow the lines of arches and niches,for example,while other patterns are contained within rectangular or square panels echoing proportions of wall and floor.

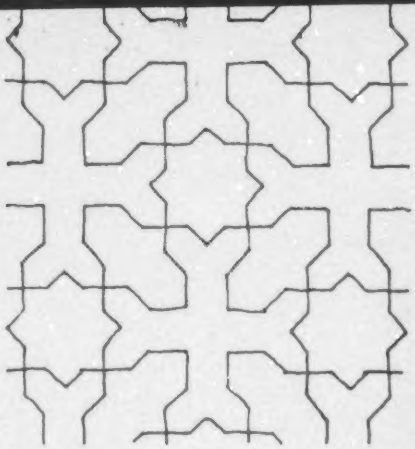
Within this main organisation there is a secondary relationship between the decorative elements themselves-contrasts of texture,materials,patterns and colour that succeed in harmonising by the quality of repetition and underlying geometry.

GEOMETRY.



Although the elements of this pattern are simple — black squares and white diamonds — the effect is one of endless combination and permutation.





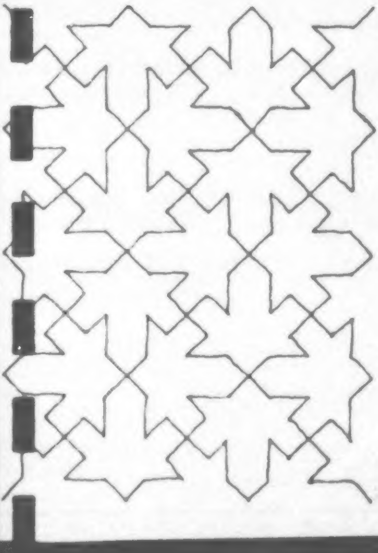
The harmony between patterns and the surfaces they are on, between one design and another, and even between the whole building, its decoration and local environment exists because the underlying principals for constructing a pattern or a building are the same and are based on the simple rules of geometry.

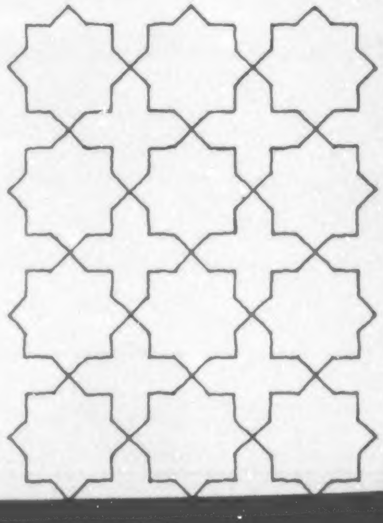
Using only a piece of string and a straight edge it is possible to draw out upon the ground the foundations of a large building; likewise by using the same simple tools the most intricate of patterns can be drawn to decorate a rug, tile or book.

It is by drawing a circle and dividing its circumference into regular parts using the same compass and then joining these points together with a ruler that all the regular polygons can be found.

Geometry parallels the logical simplicity and elegance of the Islamic religion and so it is perhaps not surprising that geometry and mathematics were both so popular and important to the Moslem. Whilst supplying practical methods for designing buildings and pattern systems, geometry with its figures and numbers possesses the possibility of magical and metaphysical interpretation, which both the Arab scholar and poet employed from the beginning.

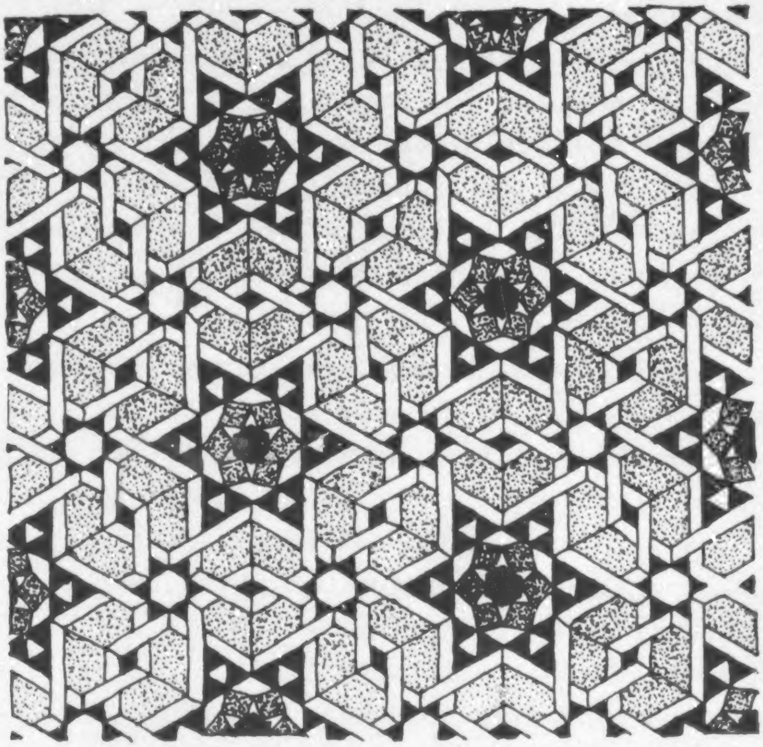
The Arabs were avid translators of the Classical Greek and Roman writers and were particularly interested in those authors who seemed to expound the essential unity of God, and so it was that Pythagoras, Plato, Aristotle and the Neo-Platonists were widely read and held in considerable esteem. The theoretical basis of Islamic geometry comes from the writing f Pythagoras and his school who taught that the nature of the universe and the structure of reality could be understood by studying the metaphysical properties of each number and geometric figure.





It is not easy to say whether polygons laid out as a particular pattern in the context of the mosque, medresse or palace, were ever intended to be understood and read as a specific symbolic language of religious or philosophical truths, but it is clear that to the Islamic mind there were parallels that could be drawn between the structure and visual effect of the patterns and the nature of God and his Creation.

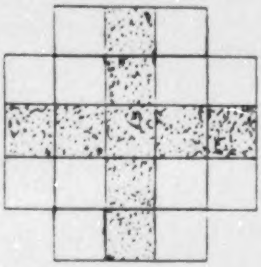
For example, making complex and beautiful patterns using the regular polygons of geometry, which the Greeks understood as an attempt by the artist to express the Essence, the Ideal of absolute beauty and order that is the unity of God.

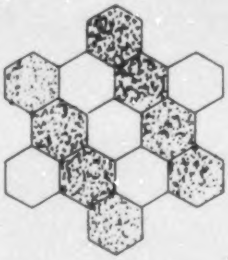


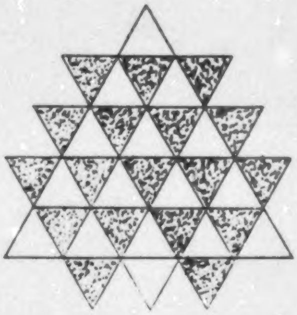
Again, the multi-layered designs perceived as many simultaneously existing patterns suggests the concept of 'kismit' or Destiny, which grows out of the notion that as God is omnipresent He experiences past, present and future at the same time and by His Will alone allows whatever exists to continue or to cease - thus at any moment there are no forms, no figures, but only an assemblage of atoms held in one pattern by the Will of Allah.

There is an interesting feature of Islamic pattern that tends to stimulate these type of reflections, and it is a particular development within Islam. Whereas patterning in previous cultures- Greek, Roman, Byzantine, Persian tended to remain firmly within the edge of the frame, Islamic patterns seem oblivious of any boundaries and so the general effect is of looking through a series of windows in the wall at a new and higher vision of reality full of order and richness.

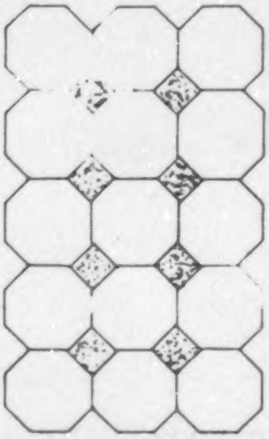
The onlooker's response to these 'windows' is so effective simply because of the method of construction. The basic elements of the designs are the regular and semi-regular grids. There are three regular grids that will entirely fill a plane surface with a regular pattern leaving no empty spaces, and these can be made with the equilateral triangle, the square and the hexagon. These three are widely used as the basis of pattern-making, especially the triangular, or isometric, grid which because it alternatively reverses the triangles, immediately sets up an interesting system of 'figure-ground' relationships, rotations (about a common point), and reflections (of 180 degrees). The square and hexagonal grids are inherent in the commonest shape of the tiles themselves.

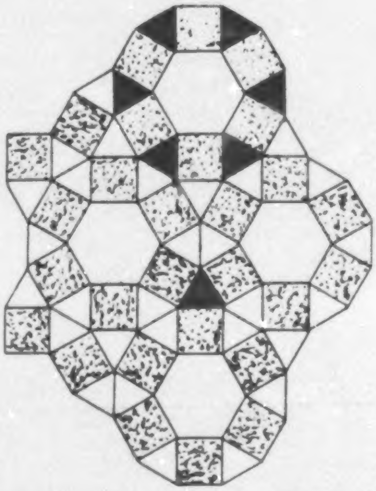


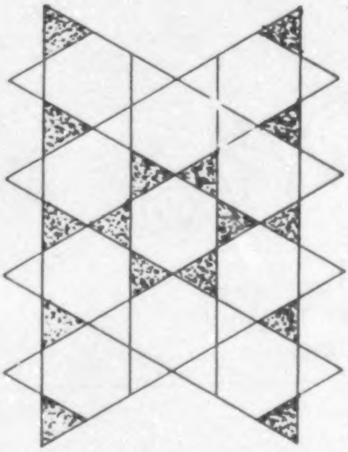




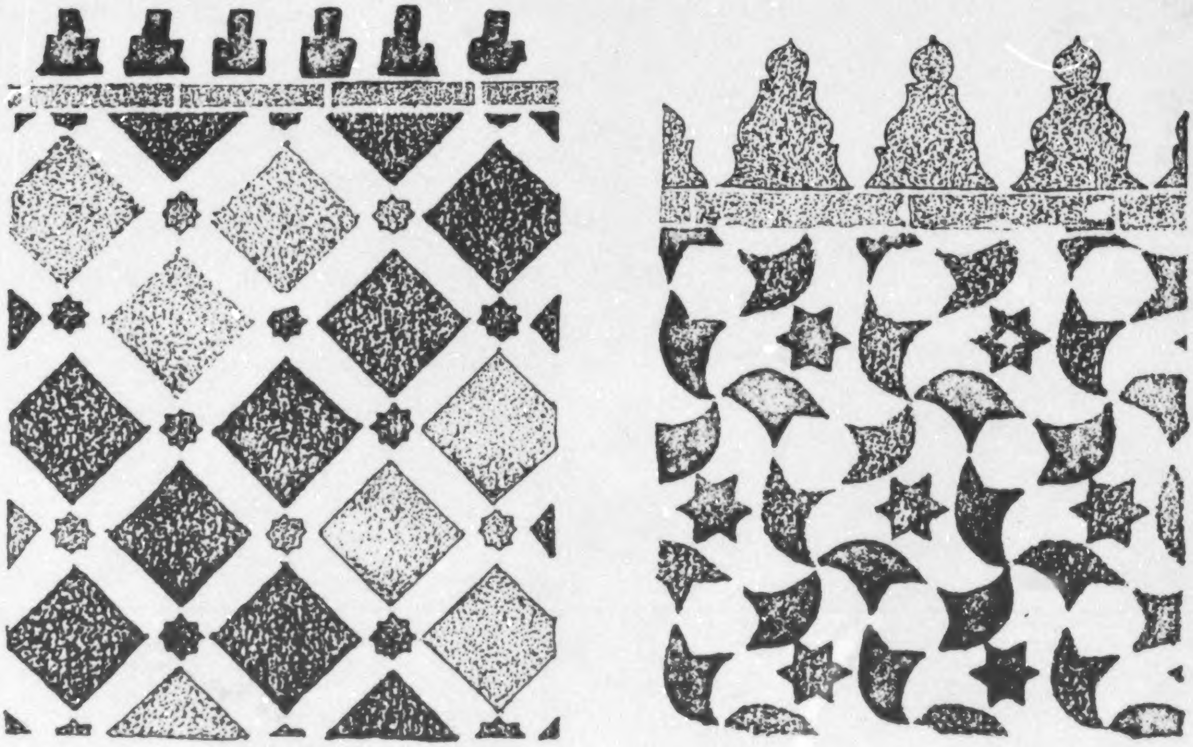
The semi-regular grids are those made up from combinations of different equal-sided polygons, such as the octagon and square; hexagon and triangle; octagon, square and triangle. These are often used to dictate the shape of whole panels within an ensemble, making a dynamic patchwork of different pattern-filled areas, as well as a basis for the patterns themselves.



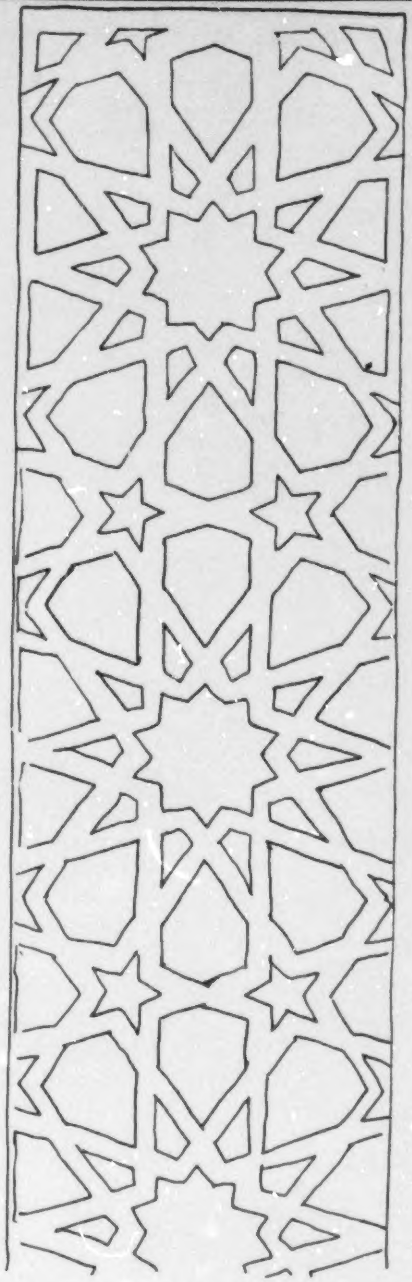




It is the continual shift of attention away from one focus point to another that leads the eye in many different directions and establishes the movement within each pattern. The development of this dynamic patterning starts with the simple grid - square, diagonal, isometric, hexagonal etc. These appear static because the eye gets used to the regular lines and angles. To increase the complexity a new direction must be introduced, for example by rotating a second grid at an angle to the first. Several of these grids, of the same or of different polygonal forms may be overlayed to make increasingly complex patterns, but in order to get the most effective and pleasing results there have to be elements of stillness. These islands of inactivity have a centralising character - always an enclosed, roughly circular shape that does not move in any direction- a star, rosette or leaf that acts like a full stop or comma after the eye has 'read' one 'phrase' or 'sentence' before moving on to another part of the statement.



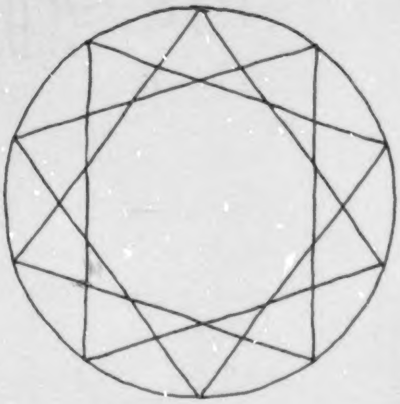
Two tile mosaics from the Alhambra Palace, Granada, Spain, showing dynamic movement and points of stillness.

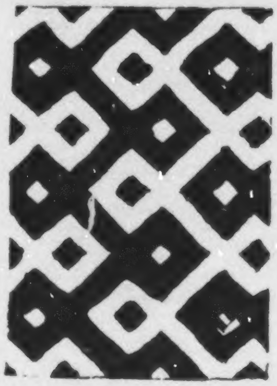


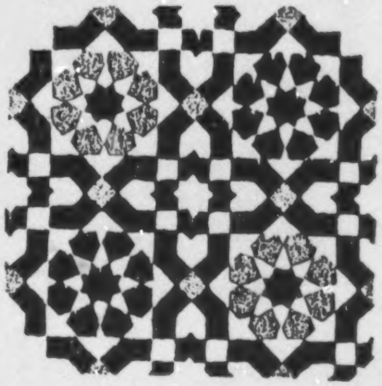
Right: the sub-divided circle of Islamic pattern-making.

Below: pattern based upon the square lattice.

Below right: pattern derived from star and cross.

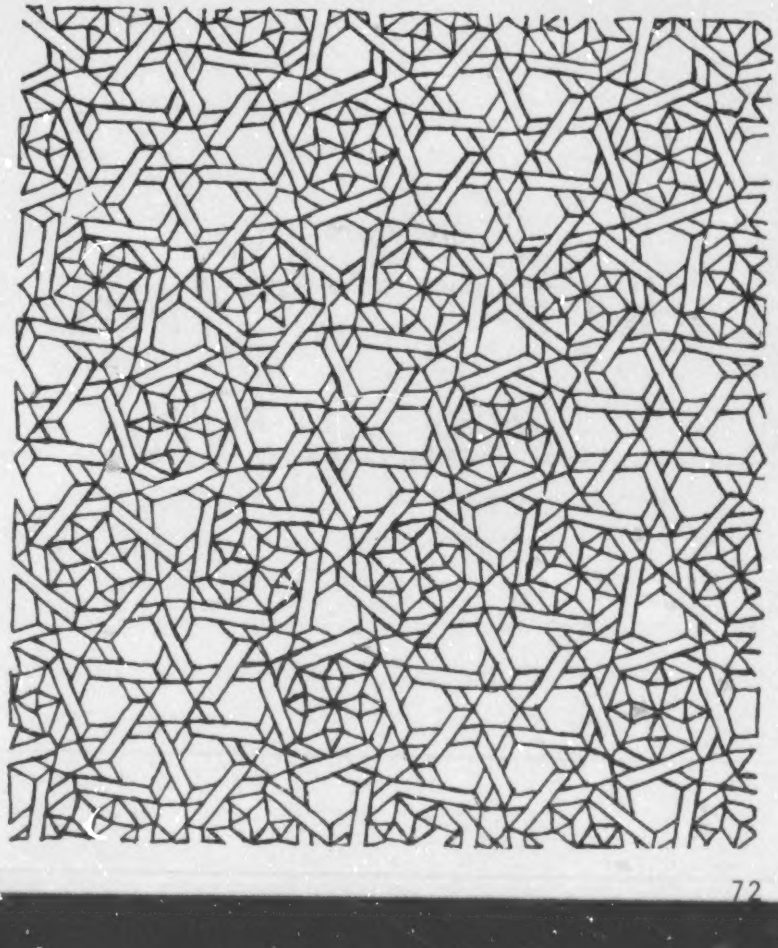






Above: inlaid panel from a door, Cairo, Egypt, 8th century.

Right: example of complex interlace design, a mosaic made from coloured stone. Egypt.



COLOUR.

Colour is a most important ingredient in the patterning of architectural surfaces. Moslem artists succeeded in creating large scale dramatic effects by contrasting building and surroundings, and by the careful choice allowed a harmony between the details of pattern and the overall effect of the wall surface.

The choice of colour was always determined by its influence on nearby colours. Because the warm colours red, orange and yellow appear to stand out from their backgrounds, while the cool greens, blues and violets recede, it was possible to create for the eye patterns with many simultaneous levels.

Background colour thus tends to be the coolest blue, blue-green or blue-violet while the complementary yellows stand out as the main lines of design, perhaps with an intermediate layer of turquoise pattern in the 'middle'. The lighter yellows and white appear nearest the viewer and were used most for details such as buds and flowers. While planning the pattern the artist must also remember that the lighter a colour the larger it appears to be in relation to the colours around it; so in order to keep a balanced composition it is important to restrict the size of the 'larger' colours and have a greater area of the 'smaller' colours. This progression in size from the largest runs yellow, white, red, green, blue then black.

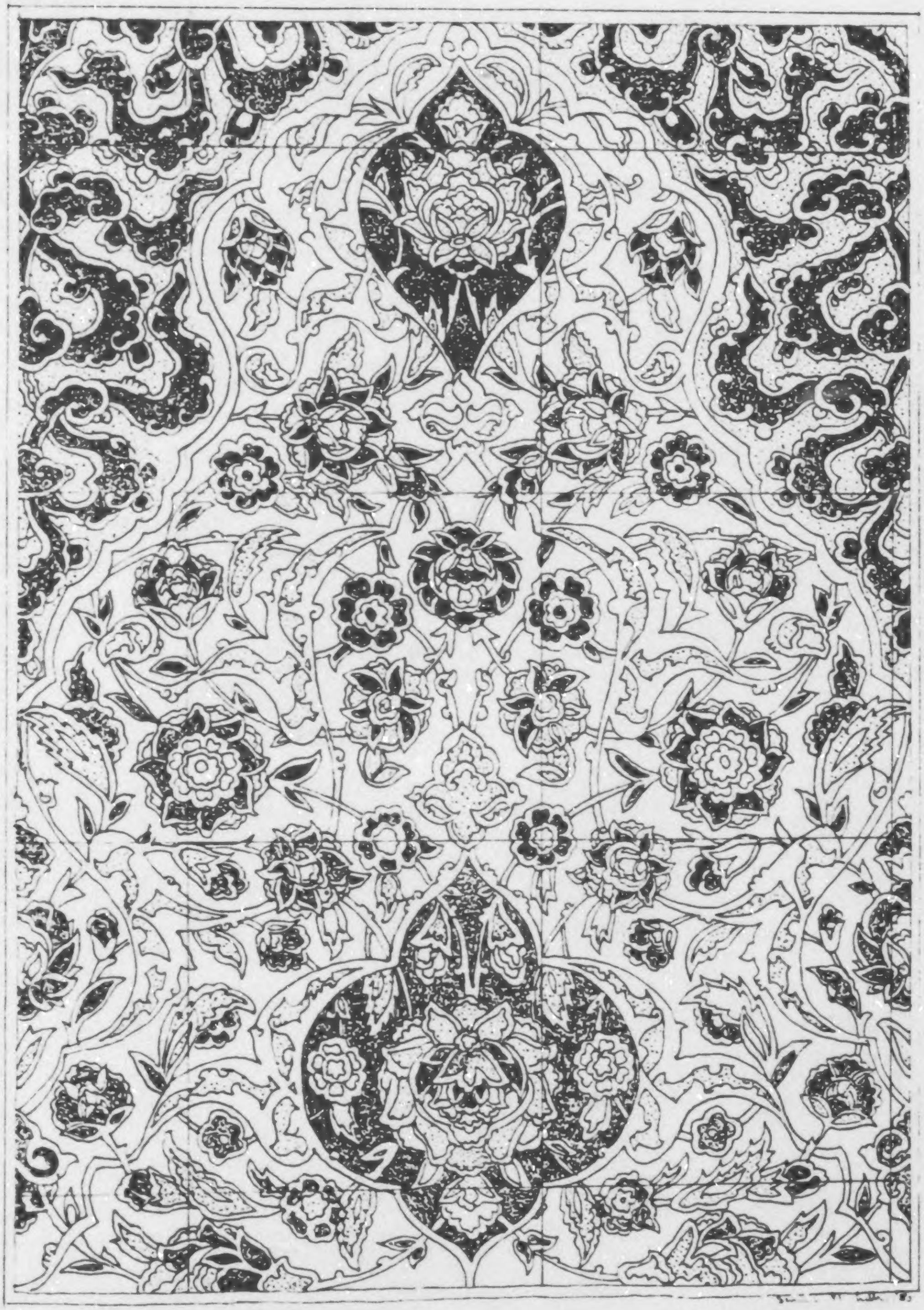
The artists were also aware of the methods of using complementary colours, avoiding placing them together in small areas where from a distance they would appear neutral grey or muddy brown and instead, to keep a vibrant contrast, complementaries were used in large areas or separated clearly by another unrelated colour.

It is not easy to say whether the patterns used in the architectural context had any widely recognised iconographical meaning, but it is clear that some scholars did affix meanings to both specific shapes and colours. It is sufficient to be able to appreciate the skill of the pattern makers' aesthetic control of architectural space, but it is interesting to consider whether the original creator of a pattern or an ensemble of patterns started only with a blank piece of paper and a compass or had already in his mind some metaphysical concept that he wished to describe.

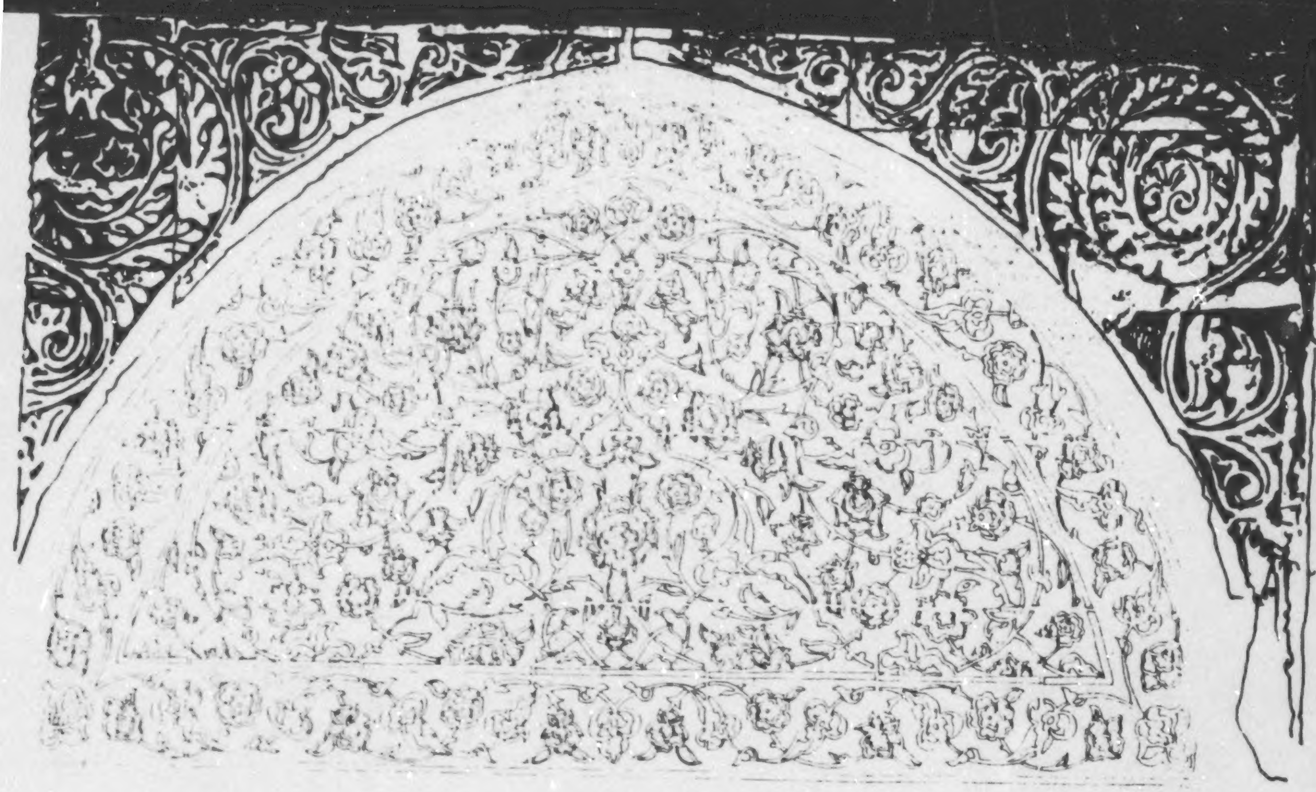
It is certain that the choice and placement of calligraphic inscriptions was carefully decided upon by theologians and it is possible that, at least in some instances, the same was done with the other patterns. Knowledge and scholarship was much-prized by the Arabs and their successors and many were well-versed in the scientific treatises of the Classical world. Also Sufism, the mystical branch of Islam was a great intellectual influence in the civilisation and was a popular rather that a minority interest, and encouraged the use of metaphor and analogy to explain spiritual truths.

One of the simplest symbolic systems is that of the Four Colours where red signifies fire;spring;morning;childhood; yellow for air;summer;afternoon;youth.; green for water;autumn; evening;maturity.; blue for earth;winter;night;old age. Whether this or any more complex colour system (for example the 'haft rangi' colours were attributed to the seven planets), was used in elaborating a coherent statement on the nature of the world or the mysteries of God- a statement in the language of pattern that had only one unequivocal meaning, is not known.

THE ARABESQUE.



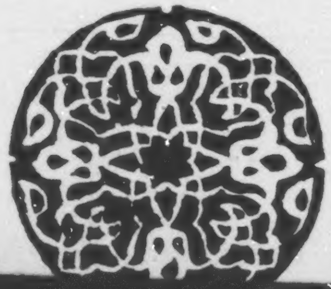
The crown piece of a panel near the door of the Şehzade Mausoleum built in 1548 by Suleyman the Magnificent for his young son Prince Mehmet. The two sides of the door are adorned with tiles and likewise the whole of the interior. The background colour is light green and the main motif is the lotus flower and its leaves.



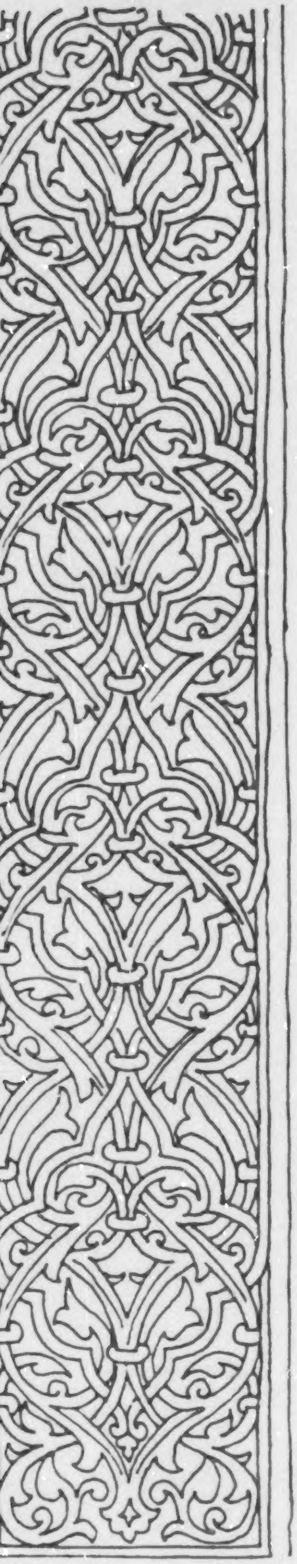
Arabesque is a group of decorative systems that were identified by the Europeans as characteristic of Islamic ornamentation. It is commonly associated with the spiralling patterns derived from plant forms, but also should include designs of geometric interwoven figures.

One of the sources for the arabesque was the Classical vine scroll in which the spaces on either side of the undulating stem were filled with leaves and bunches of grapes. Already in Late Classical decoration these foliated scrolls were becoming more absracted and the first Arab artists continued the trend treating the foliage as elements of geometrical design and paying more attention to symmetry than to the natural forms of leaf and stem.

Above: spandrels of carved stone with tight arabesque closely derived from classical acanthus scroll. In this drawing the spandrels frame a tile panel ottoman arch with Turkish 'rumi' designs interlaced with chinese lotus motifs. 17th century, Istanbul.



Left: tinglaze mosaic medallion from the Green Mosque, Bursa, 15th century.

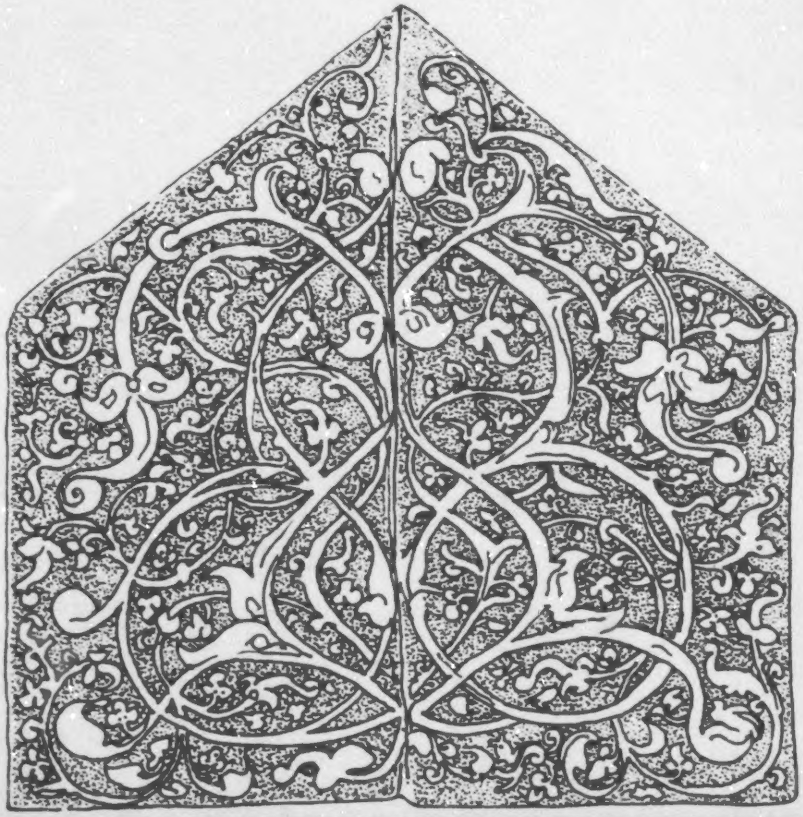


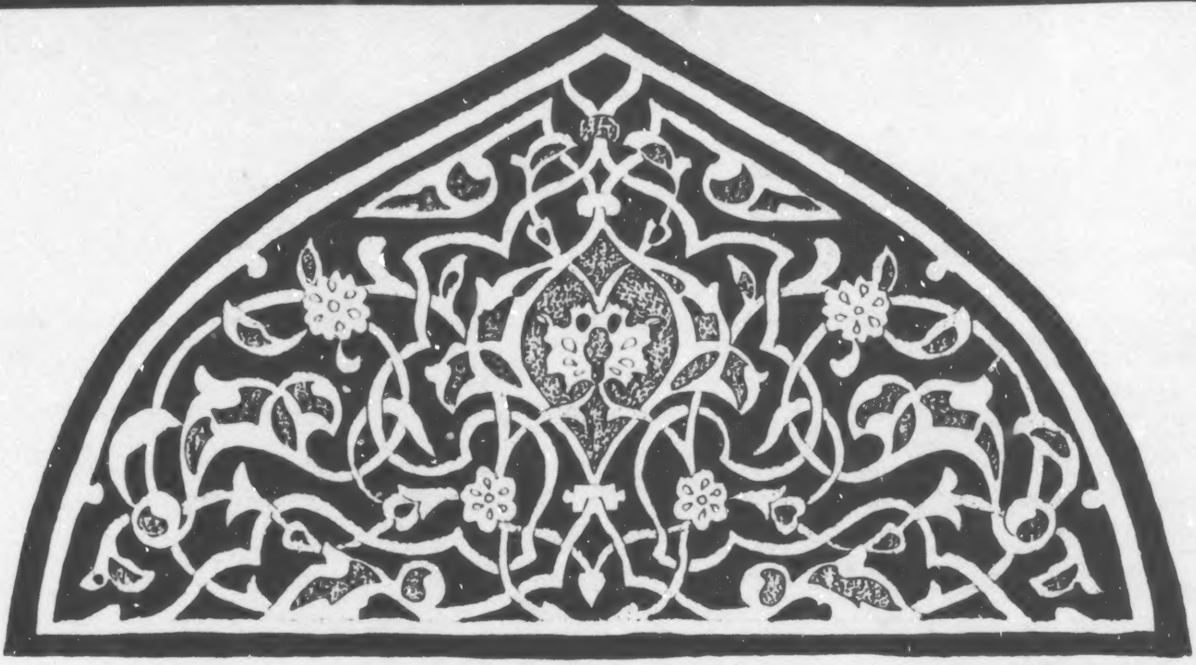
The stalk becomes a line that twists and spirals to make attractive shapes and enclosed compartments. The leaf becomes an outgrowth of the stem while this stem passes right through the leaf. Thus where a leaf or bud or flower would be at the tip of a plant in nature, in arabesque they are not an end but a new point of departure for another stem to develop, and so on in endless repetition.

The variations within this model are enormous- for example in the stucco decoration in the mosque of Ibn Tulun, Cairo, the leaves cover almost the entire surface with leaf appearing to grow out of leaf. What remains of the background is curves and spirals that articulate the movement of the pattern. In contrast to this, decoration in the Nur al Din complex almost entirely comprises patterns of intertwining stems.

Above : example of arabesque
with interlaced bands.

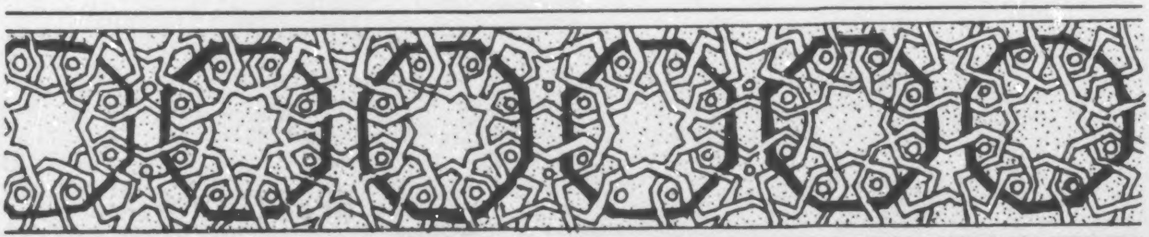
Right : two panels decor-
ated in lustre . 76cm
high, Kashan, Persia.
c. 1250.

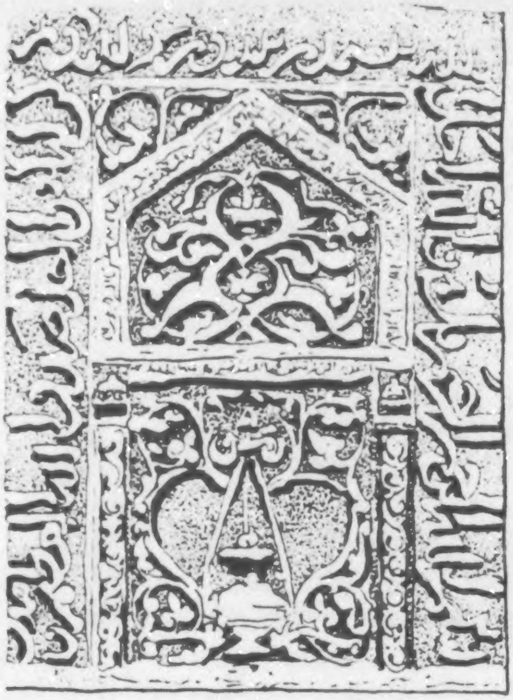




Other types of foliated decoration used in the Classical world were taken over and modified: the cornucopias and flowers in vases can still be traced but like the leaves and stems they become subject to the overall pattern. Foliage growing from a vase is frequently employed because it allows strict symmetry about a single vertical axis, suitable for filling rectangular panels. This 'heraldic' style relates to ancient Persian, Mesopotamian and Egyptian images of the 'tree of life', and this link is emphasised in those designs where the foliage grows upwards as if it were a tree.

Often the arabesque consists of several interlocking systems that contrast larger and smaller geometrical areas, different densities of pattern or different styles of foliation. It is commonly seen that one of these twining systems is not foliated at all but is a plain band of a single width that supplies the framework upon which the areas of foliage are built.





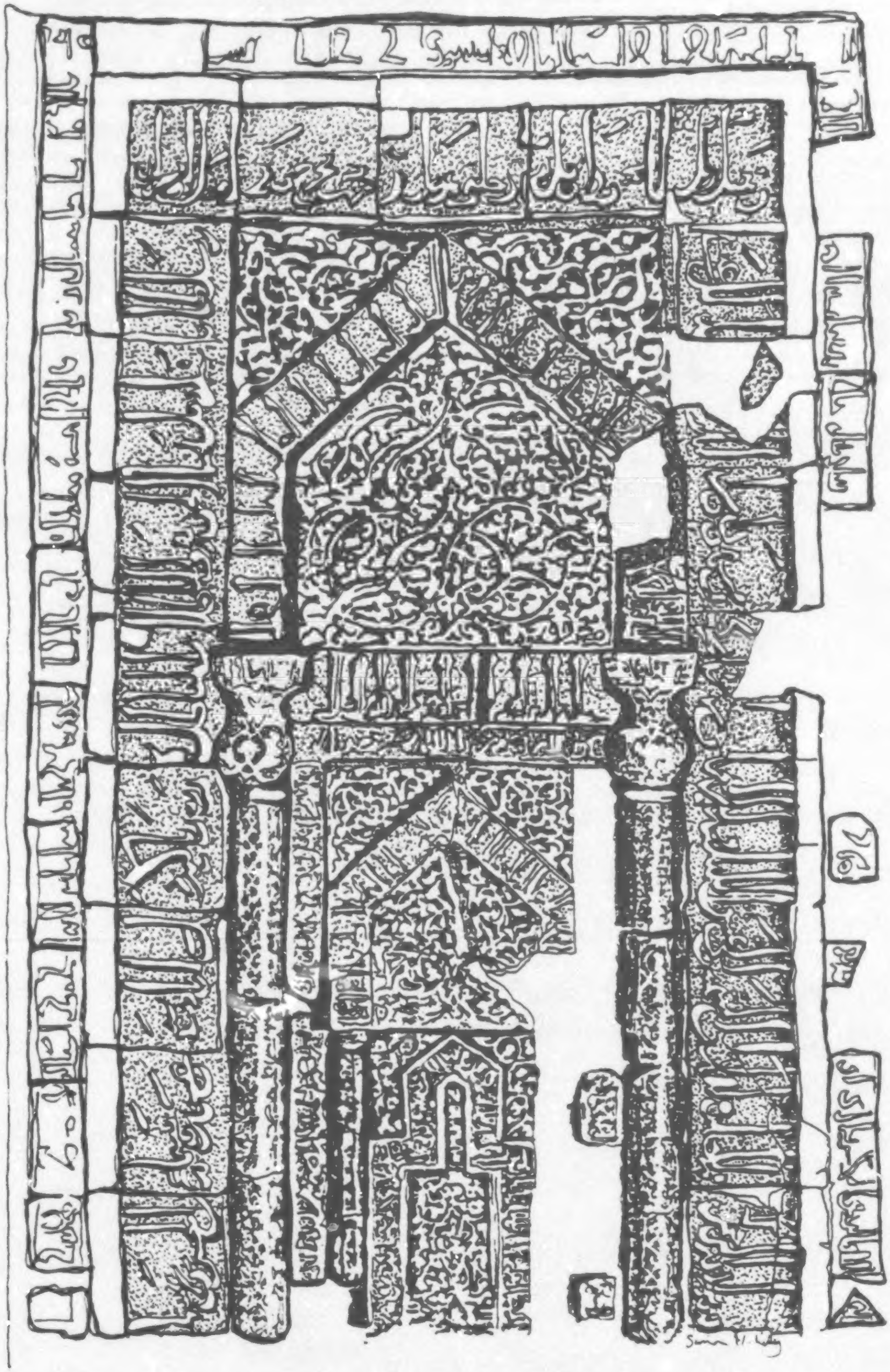
The complete elimination of foliage is the natural progression from this type and the arabesque now consists only of interwoven bands based upon complex geometric patterns. The visual effect of these non- floral arabesques is the same as those with identifiable flowers and leaves, they create an interplay of positive and negative patterns focused around fixed points that are the bright buds in floral arabesques and are the stars, suns and other polygonal shapes in interlace. These points allow the eye a fixed reference within the dynamism of lines.

Plaitwork arabesques owe much of their visual complexity to the sorts of figures around which they are drawn, used most often are polygons with an odd number of angles such as pentagons or stars with seven or fifteen points which allow for many interactions which,in turn, form irregular geometric shapes.

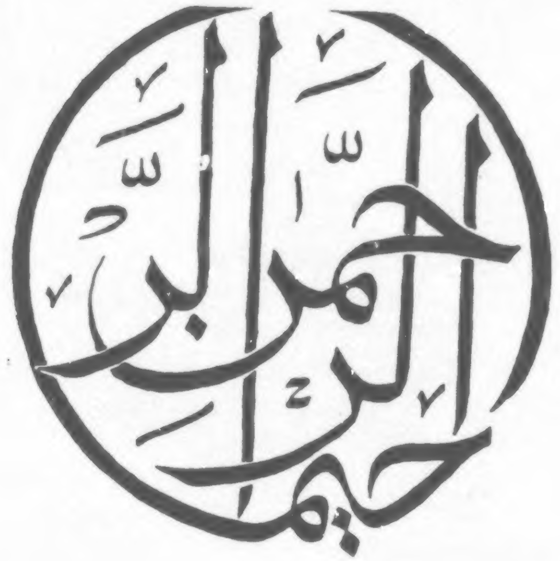
The most obvious distinction of visual effect between the two types is that floral arabesque remains firmly based on the circular spiral in which the eye is led in a continuous series of curving lines while geometric plaitwork takes the form of tight knots like those familiar in the Celtic world or uses straight lines to build up patterns in which the eye is continually led out from a focal point by radiating lines and led back to the same or another focus in a series of disorientating movements.

Above: ceramic tombstone decorated with white, blue and tourquoise glazes, Kashan, Persia, early 14th century. Note the mihrab design and the symmetrical arabesque. 24" high.

CALLIGRAPHY.



Lustre and blue painted mihrab from the Maydan Mosque at Kashan, signed by Hassan ibn-Arabshah al-Nakkash, Kashan, Persia, 1226. This mihrab is 9 feet tall and carved in high relief.



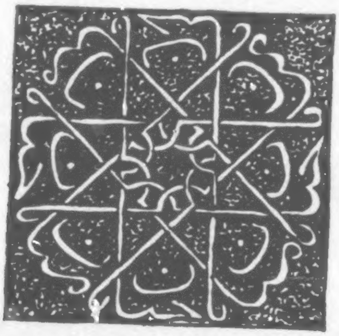
Medallion with calligraphic inscription 'The Compassionate, The Merciful.'

" Consider the inkstand and the pen and what they write."
(Koran.Pen Sura. 68).

Calligraghy, the art of the written text, is considered by Moslems to be the most important of the arts, for it was by writing down the words of the Angel Gabriel that the Prophet Mohammed brought the Koran, the Word of God, to man.

Because the Koran was written in Arabic that language and its script became the unifying visual symbol of the Islamic faith wherever it travelled, distinguishing those things that belong to Islam in an unmistakable way.

The main purpose of Arabic was now to transmit the Koranic message and the script itself became imbued with some of that divine authority and power.Letters became associated with numerical, occult and mystical significances, (as had the Hebrew and Greek alphabets before it), and could be used in a metaphorical and talismanic way. Thus one of the Names of God or the names of the Prophet and the Companions or a quote from the Koran could be inscribed on any object to serve as a protection or blessing on the user.

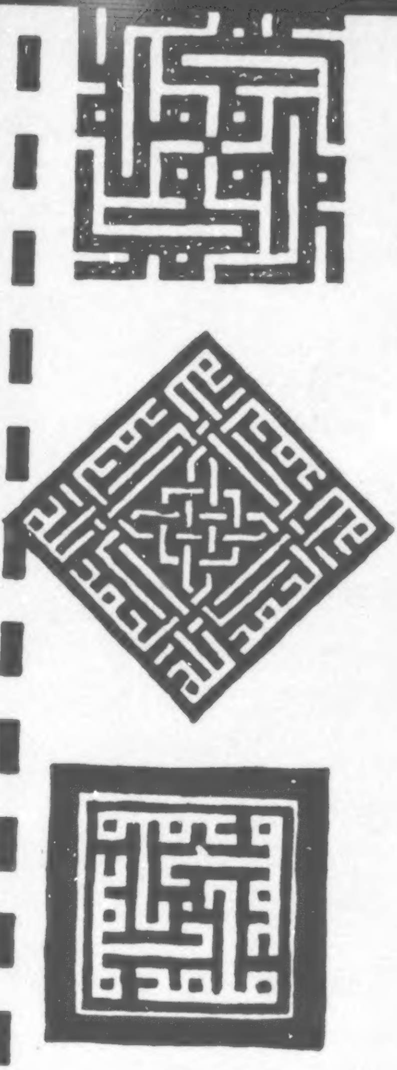


Right: epigraphic ceramic tile from Istanbul.

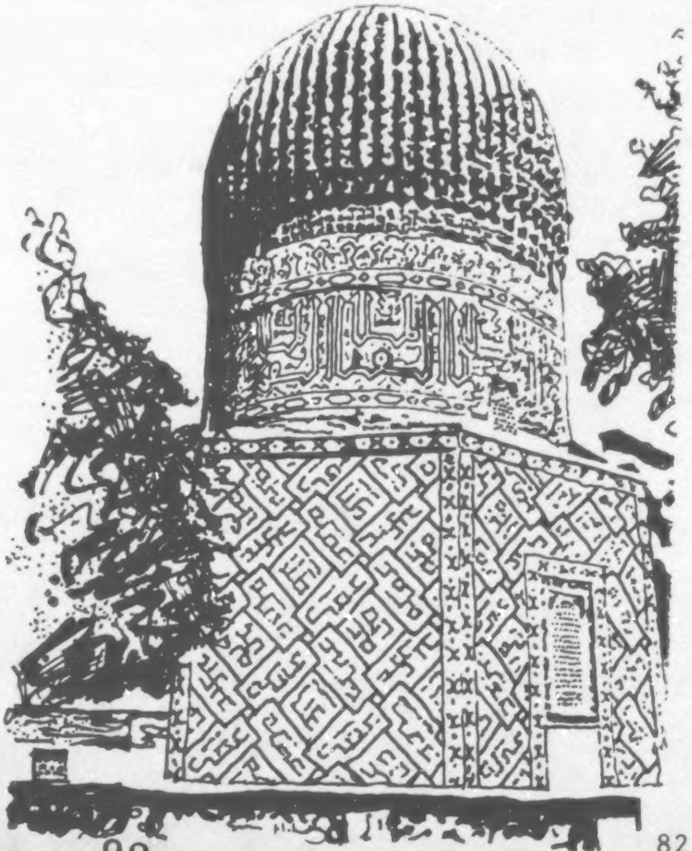
In many cases the text is very difficult to read because of the elaboration of the letters or the inaccessibility of the text in an architectural setting. Indeed in a number of cases it is clear that the writing has no meaning at all- but the fact that it is Arabic is sufficient enough to give it power.

Arabic script is written across the page from right to left with the simple vertical, horizontal and diagonal strokes of a pen together with smaller dotted (diacritic), marks to indicate vowels.Because the elements of each letter are so simple a great variety in shape can be achieved without losing the meaning. It was this that allowed the development of so many different types of writing that could be used to pattern every sort of object from a ceramic dish to the dome of a mosque.

The earliest script used to copy the Koran is known as Kufic, from its place of origin,and consists of angular strokes that emphasise the horizontals and verticals.Because of its association with the Koran and because the shapes



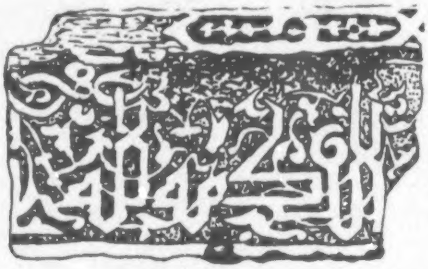
Three panels of Kufic inscription. Top: names of Mohammed and Ali. Centre: 'Praise be to Allah'. Below: 'Mohammed' repeated four times.



Right: a view of the Gur-i Mir, the Mausoleum of Tamurlaine, Samarkand, completed in 1434. The building shows the use of calligraphy as architectural decoration.

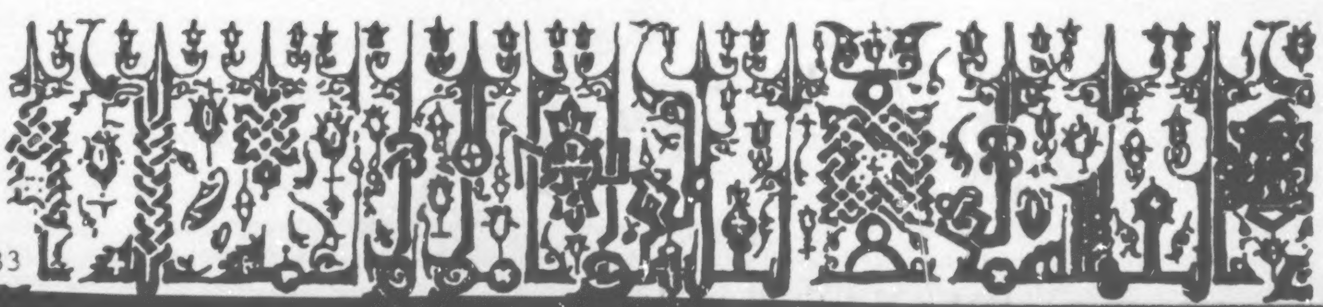
were appropriate for carving in stone and modelling in brick Kufic is often found in an architectural setting, either for quoting holy texts or for pious dedications. Kufic is perhaps the most versatile script- elements can be woven together or transformed into flowers and animal heads or bent round to make medallions and complex pattern overlay.Later as other scripts became popular kufic was still used to inscribe precious objects of all sorts and for surah headings in the Koran.

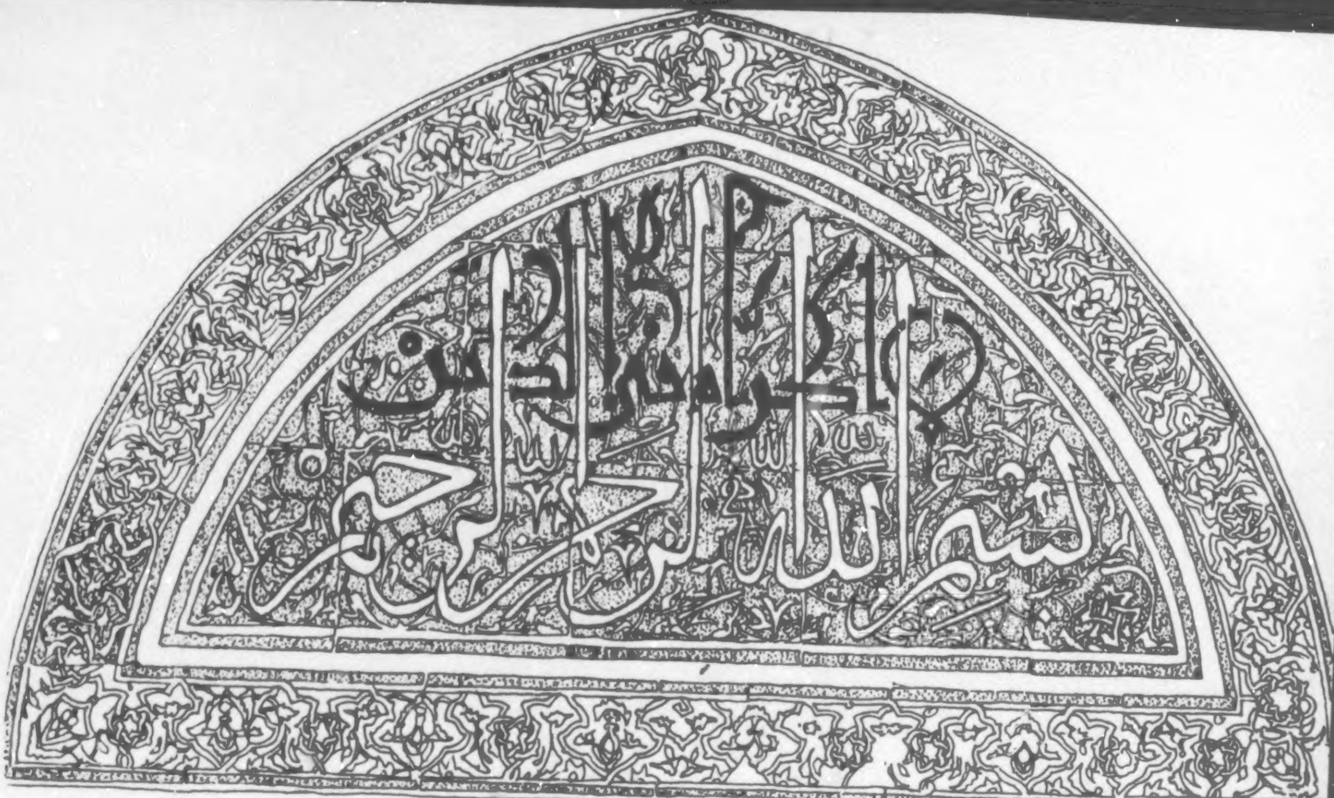
The other major type of script is the 'thuluth' group. These are more curvilinear and graceful than kufic and are often used in conjunction to form a dynamic panel or frieze, interweaving with each other and with the background foliage.'Naskhi' is the main text used in the body of the Koran because it is legible and stately with its emphasis on the long horizontal strokes. 'Ta'liq' is especially used in Persian secular literature and consists of streams of words flowing down the page from right to left, whereas 'nasta'liq' is more dramatic and lively and was the major way of writing Persian poetry after the 14th century.There is a story that when Mir 'Ali of Tabriz invented nasta'liq in 1420 he was inspired



Carved tile from frieze, Samarkand, late 14th century. Height: 39cm; width: 19cm.

An example of knotted and floriated Kufic.

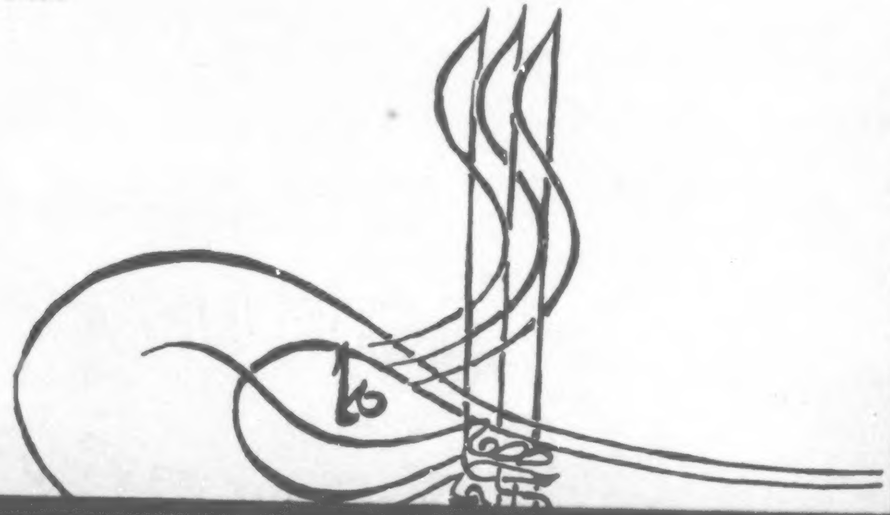




A tile panel above an outer courtyard window, Fatih Mosque, Istanbul, 1470.

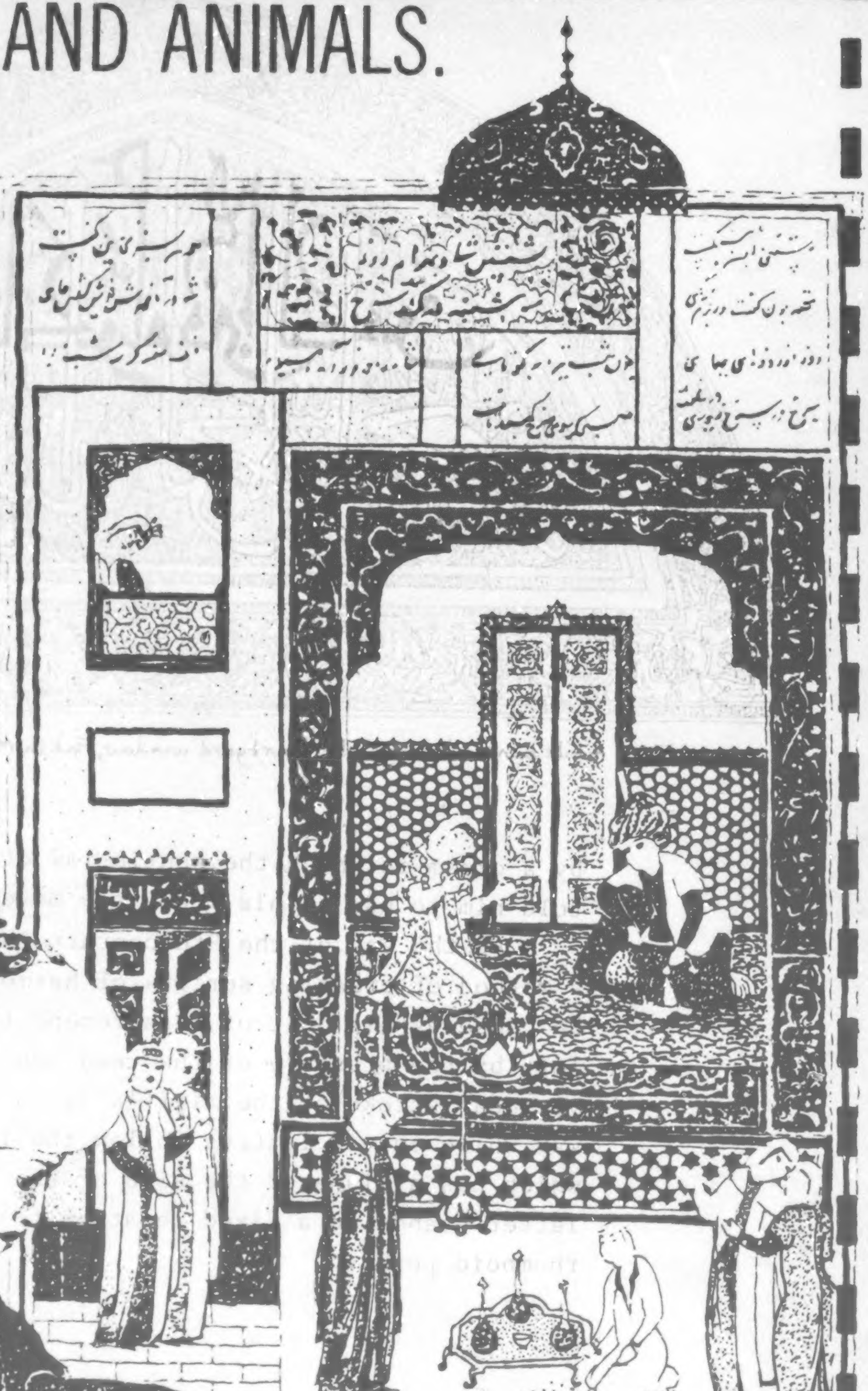
by a dream in which the son-in-law of Mohammed, 'Ali told him to use as his model the movement of geese.

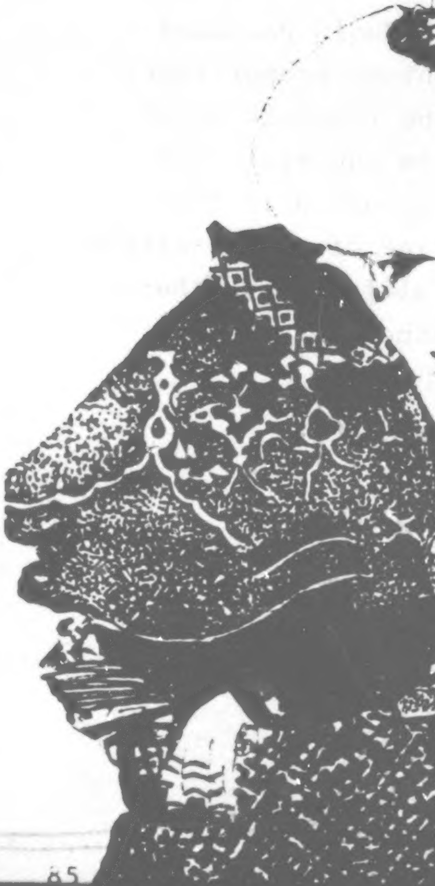
At the end of the 9th century Ibn Muqla proposed a method of creating scripts of harmonious proportions. He chose as his unit of measurement the rhomboid point left by the pressure of the reed pen in one spot. The vertical stroke of the alif('a'), is measured in this way while curved letters follow the line of a semi-circle which has a dianeter the size of the alif. Every other letter stands in a fixed relation to the alif or the rhomboid point.



The tugra is the traditional monogram of the Ottoman Sultans which was used on official documents. Shown here is the tugra of Suleyman the Magnificent.

FIGURES AND ANIMALS.





Above: Persian manuscript illumination showing richly decorated palace interior.

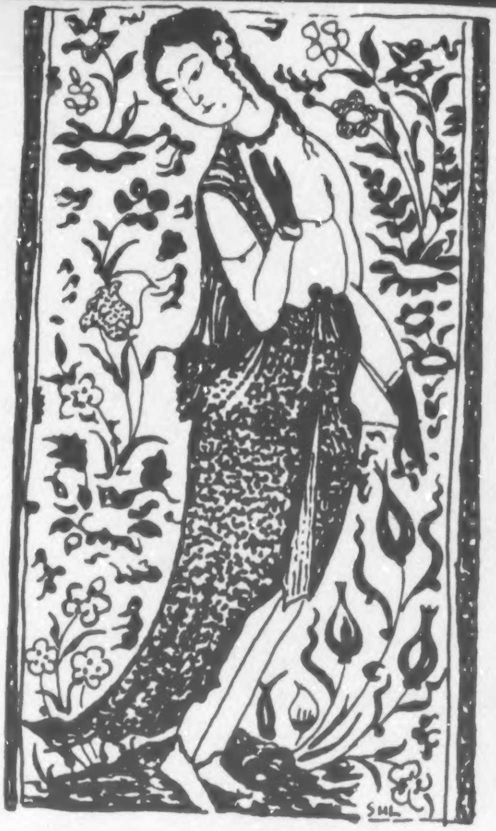
Left: highly naturalistic portrait of a young man by a Turkish artist of the Ottoman period.

The depiction of human and animal forms can be found in all periods of Islamic art. Some of the finest products of Islamic culture are figurative, such as illuminated manuscripts from Persia and the polychrome ceramic wares known as 'minai'.

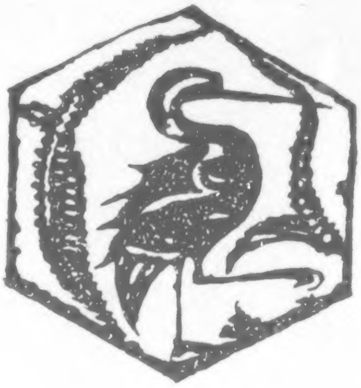
The difference in figurative output between Islam and, for example the Christian West, is that whereas Christianity chose to tell its message with imagery from the Classical figurative traditions of the Mediterranean Islam was aware of the danger of idolatry in the use of images. Certainly at its inception Islam consciously divorced itself from the animistic and totemic religions that then abounded in the Arabian peninsula.

The Koran specifically warns against worshipping idols in several places: "avoid them and you will prosper in happiness"(v.5.92). but nowhere does it forbid artists to draw animals and people. However, from the 9th century when the Islamic codes of conduct were established and the hadith-the sayings attributed to the Prophet-collected together the ban on representation became accepted generally, as a precaution against unintentional idolatry and sacrilage. It was not until the 13th century when nomadic tribes encountered Islam on their westward migrations, that representation occurs in any significant quantity.

It was important for the pious Moslem artist to know to what degree figurative art was admissible for there are hadith referring specifically to the punishment for transgression: "On the day of resurrection the most terrible of punishments will be inflicted on the painter who has imitated the beings created by God. He will say to the painter then 'Give life to these creations'".



Dancer in a garden setting. North Persia polychrome tile, 10½" high, about 1600.



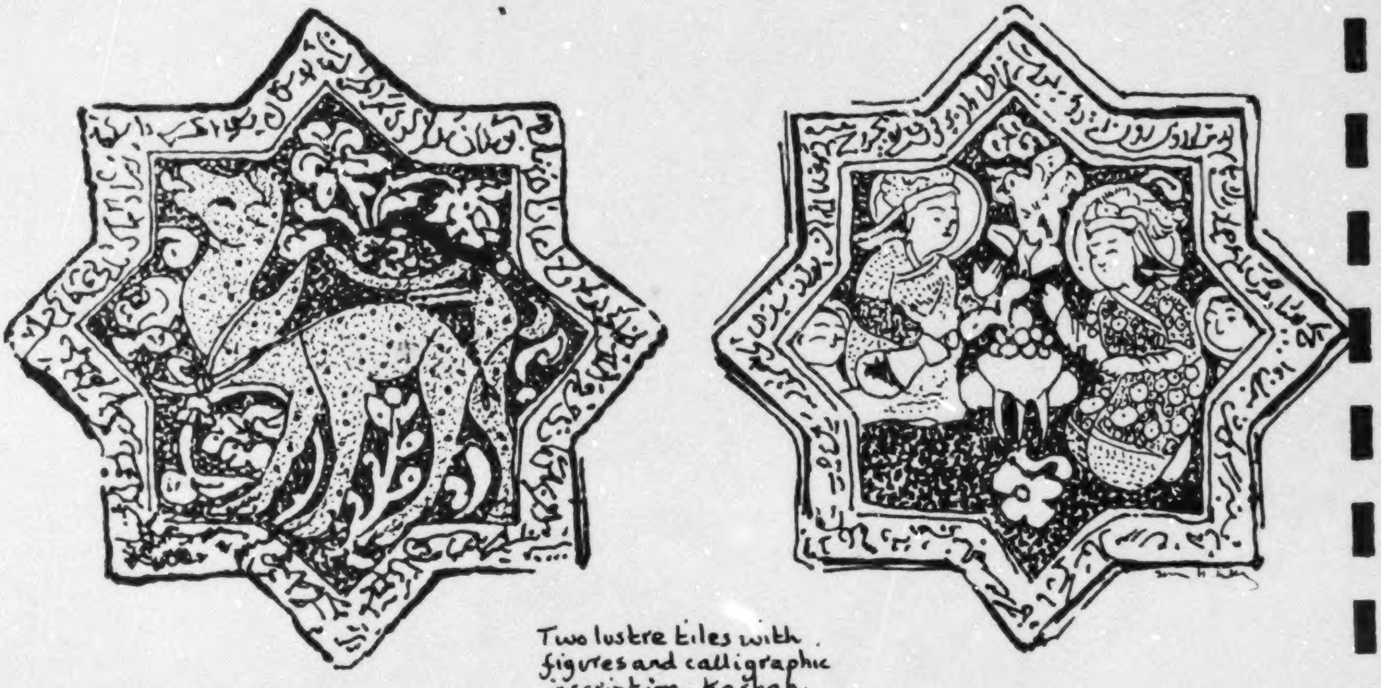
10th century Syrian tile with stork and stylized foliage.

"Those whom Allah will punish most severely on the day of Judgement will be the painters who imitate his creation."

Another hadith allowed the making of dolls as long as they bore no resemblance to any individual.Despite this no three-dimensional sculpture was attempted apart from a few terra-cottas of the 7th and 8th centuries.

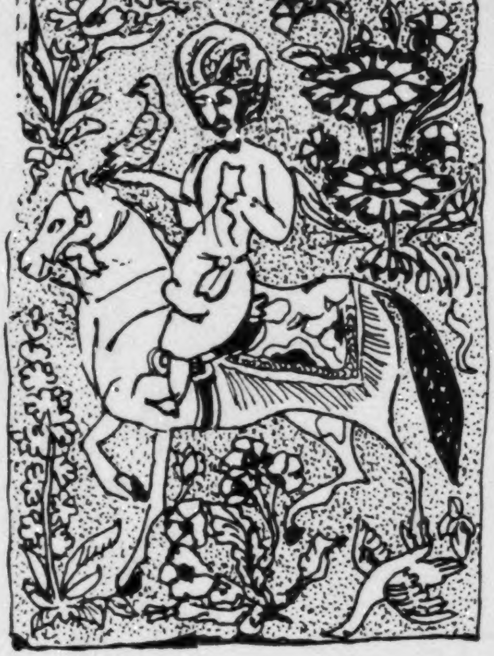
These statements were interpreted as meaning that sin would be incurred if the artist attempted to imitate the reality of God's world and the individuality of each creation. One hadith makes this clear:

"an artist asks 'But,once and for all,am I not to practice my trade,am I to give up representing animate beings?'And the reply was "Yes, but you can always chop off the animals' heads so that they don't look alive, and you can do your best to make them look like flowers."



Two lustre tiles with figures and calligraphic inscription. Kashan, Persia, 13th century.

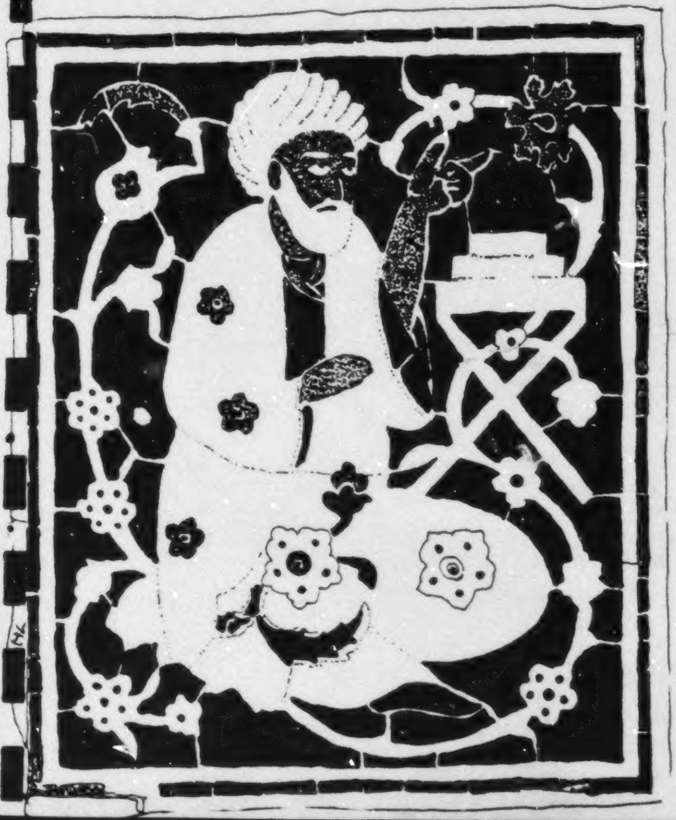
Within the different backgrounds of the Moslem world artistic traditions could be found that suggested aesthetic approaches that were acceptable to the orthodox artist. Firstly, the illusion of depth and space created by perspective and the diminuition of forms- a device that had been popular in Late Classical Mediterranean art- could be replaced by a single picture plane from the bottom to the top as if looking down on the landscape from above, with little or no area left for sky.



Polychrome tile from Teheran, c.1860. 7¾" high. Shows a prince out riding with his hawk.

Now the figures and plants appear as if scattered at random on a carpet design. The size of each figure is determined not by position in space but by importance and compositional balance.

The second possibility was the total avoidance of natural shading and cast shadows. This is because their presence would indicate solidity and therefore reality - as long as the things presented have no shadows they could not be seen as imitating the reality of the world. Colouring became free with figures, animals and landscapes coloured according to what the artist considered would be most vusually exciting rather than what the natural colour was. So purple and green animls walk through blue deserts and sleep on jewel-like rocks and grasses. Most human figures are not seen as individuals, but as a type in a characteristic pose - such as the seated prince with cup in hand, a prince on horseback holding a hawk on his wrist, a warrior raising his sword to strike, a woman walking in a garden or dancing, and so on. However, there was also a strong tradition of royal portraiture where naturalism, individuality and reality are expertly captured, as well as the most beautiful representations of wildlife, but these are the commissioned works of the rich and although they are among the finest of Islamic arts they may be seen as generous exeptions to the rule.



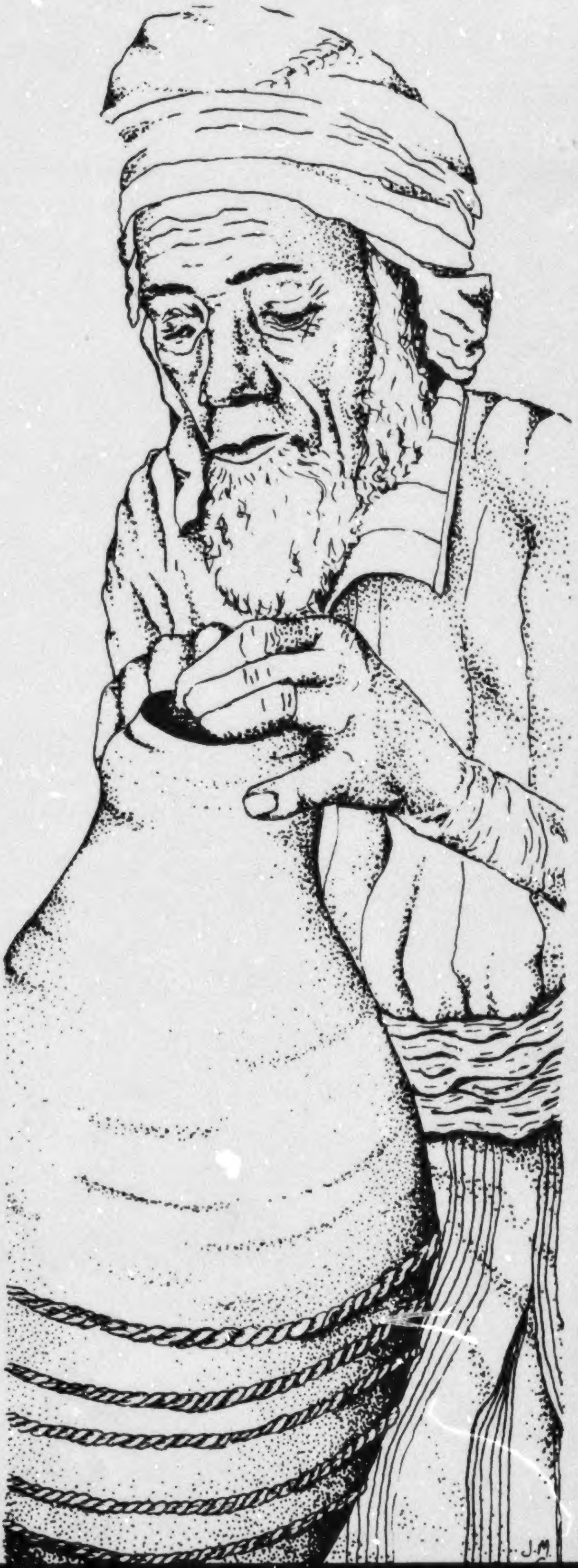
Safavid mosaic tile showing a sage in discourse, 17th century, Persia.

TECHNIQUES.

The techniques for making fine faience wares have remained the same among the potters of Persia for centuries. The making of the body material requires large numbers of riverbed pebbles, the best being flint or other stones with a high silica content. These are first broken up in a stone mortar with a hammer until the pieces are as small as possible. These fragments are then put in a mill- a stone turned by hand on top of a fixed stone- and ground twice more with heavier and finer stones so the result is a fine powder. This is mixed with gum tragacanth and water and thoroughly blended into a paste with which the potter can work like clay.

To make a glaze for the completed wares very white pebbles are exceedingly finely pulverised then mixed with water and sodium carbonate which is used as a bleaching agent. This mixture is then ground in a very shallow mortar to prevent any grains appearing on the glaze surface during firing.

The tiles and pots are then placed in specially constructed kilns - cylindrical brick covered in mud raised about 2.5m above the ground. The potter enters through a small hole in the top and arranges the wares on shelves.Leaving, the hole is stopped with clay and the kiln fired with willow and poplar wood for 8 hours.

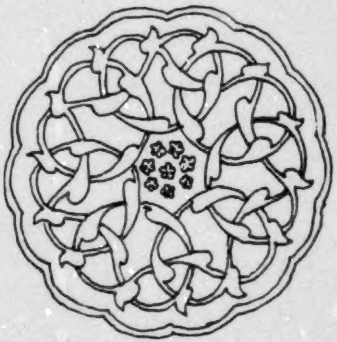


One of the motifs found on the tomb-towers is the 'star-and-cross' grid. This was taken up by the potters of Kashan who transferred the pattern into wall-tiles painted in the lustre technique and often modelled in relief with inscriptions picked out in blue glaze.

In lustreware the design is painted onto the already fired ceramic using a pigment of sulphur mixed with silver oxide to give a yellow stain, and copper oxide which when fired results in a golden metallic colour.This pigment is mixed with an earthy vehicle like red or yellow ochre.When the tile is ready it is placed in a reducing kiln with lots of smoke, little air and no direct flame until it is lightly fired.The ochre medium is then rubbed off to reveal the glowing lustre glaze.

The technique needs a great amount of expertise because the metallic oxides are extremely volatile and are easily damaged. Most of the wares from Kashan from 1205-1334 were made by the members of one family.Not only were thousands of high quality 'star-and-cross' tiles produced to be set in dados in mosques and secular buildings but also complete tiled mihrabs were made in high relief.

The following instruction for a lustre glaze was taken from a manuscript dating from the 13th century which would have been used by the potters of Kashan.



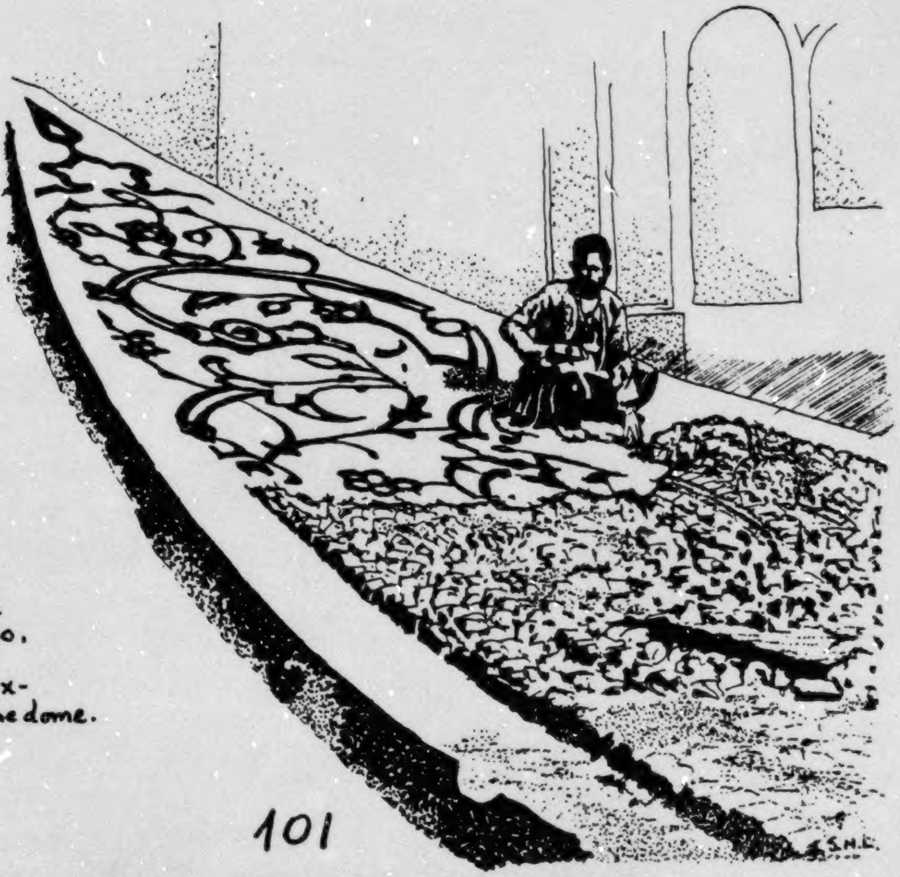
1 1/2 parts of yellow or red arsenic
1 part of silver or gold pyrites
1/2 part of yellow vitriol
1/4 part of calcined copper

Mix into a paste, pound and grind. Mix a quarter of this compound with 6 dirham of pure sulphate of siver and grind for 48 hours.
Then mix with grape juice or vinegar to stop oxidation and paint with this onto the tiles.

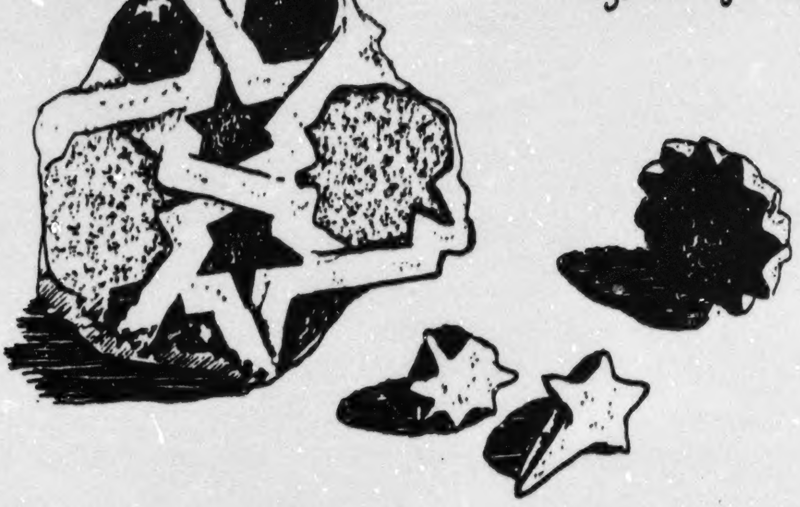
A special oven was then constructed and the tiles fired for 72 hours in a slightly smoky fire. When cooled the tiles were removed and rubbed with moist earth to bring up the gold-coloured glaze.

The techniques of the potter and tile-maker have remained unchanged in essentials down the centuries. Mosaic faience, or tile-mosaic, is still made in the same way as it was by the craftsmen in Seljuk Konya. Firstly, a large number of tiles are made in the colours required for the work and each colour is fired at the correct temperature for maximum saturation.

The design is drawn out on paper and half is painted in the colours to be used. Then the master workman cuts paper patterns for each of the shapes in the design, whether they be stems, flowers, leaves and so on. These elements are then pasted onto a corner of a tile of the appropriate colour and the corner cut off with the faience-cutter's sharp edged hammer that resembles a small adze. The tile is chipped away until it is exactly the size of the paper pattern, and the edge smoothed with a file. If the motif contains an element of another colour a hole is bored into the piece and the inset cut and fixed in its place by pouring plaster on the back.



Laying mosaic fragments face down on a drawn-out pattern. Isfahan, Madar-i Shah Madresa, 1930. The finished panel will be laid on the exterior surface of the dome.



The entire panel is assembled on the ground. If the panel is flat a thick layer of white plaster is spread out and levelled; if the panel is to fit on the convex outer dome or the concave interior of a dome or archway an exact replica is built. Inevitably there is unevenness in the surface of the bed and this means that each panel has slight undulations which reflect the light differently to create subtle variations in the brilliancy of the colours.

Using a stencil the full design is pounced onto the plaster with charcoal dust and then incised with a knife. Now the glazed sections are laid face down in their appropriate places, starting with the main outlines. The pieces are fitted as close together as possible and when the pattern is complete it is surrounded by a wooden frame and a thick layer of liquid plaster poured over the back. Once this had dried in a couple of days it can be lifted up and fixed onto the wall surface.

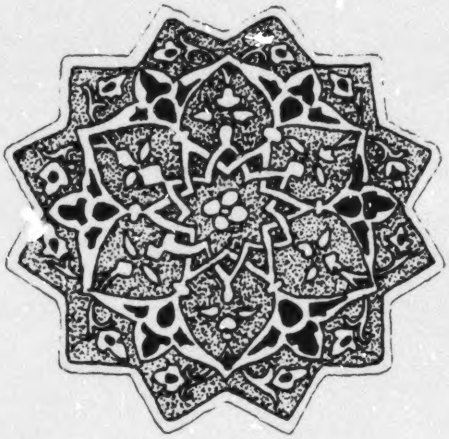
Tile-mosaic had many advantages over the lustre tiles it in many cases replaced: it could be manufactured in any place that already produced high quality tiles; there was only one firing whereas lustre needed two; mosaic could be fitted onto any size or shape of surface; it didn't wear with exposure like lustre did, and finally the only part of the process requiring high expertise was in cutting the pieces.

Although tile-mosaic is first found in Turkey,it is in Persia that the technique reaches its peak of popularity, for it enabled the designers to envisage buildings covered in brilliant colour. This reinforced the tendency to use large, simple architectural masses that would allow mosaic its full potential, enhancing the monumentality of buildings.

"HAFT-RANGI" THE SEVEN COLOUR TECHNIQUE.

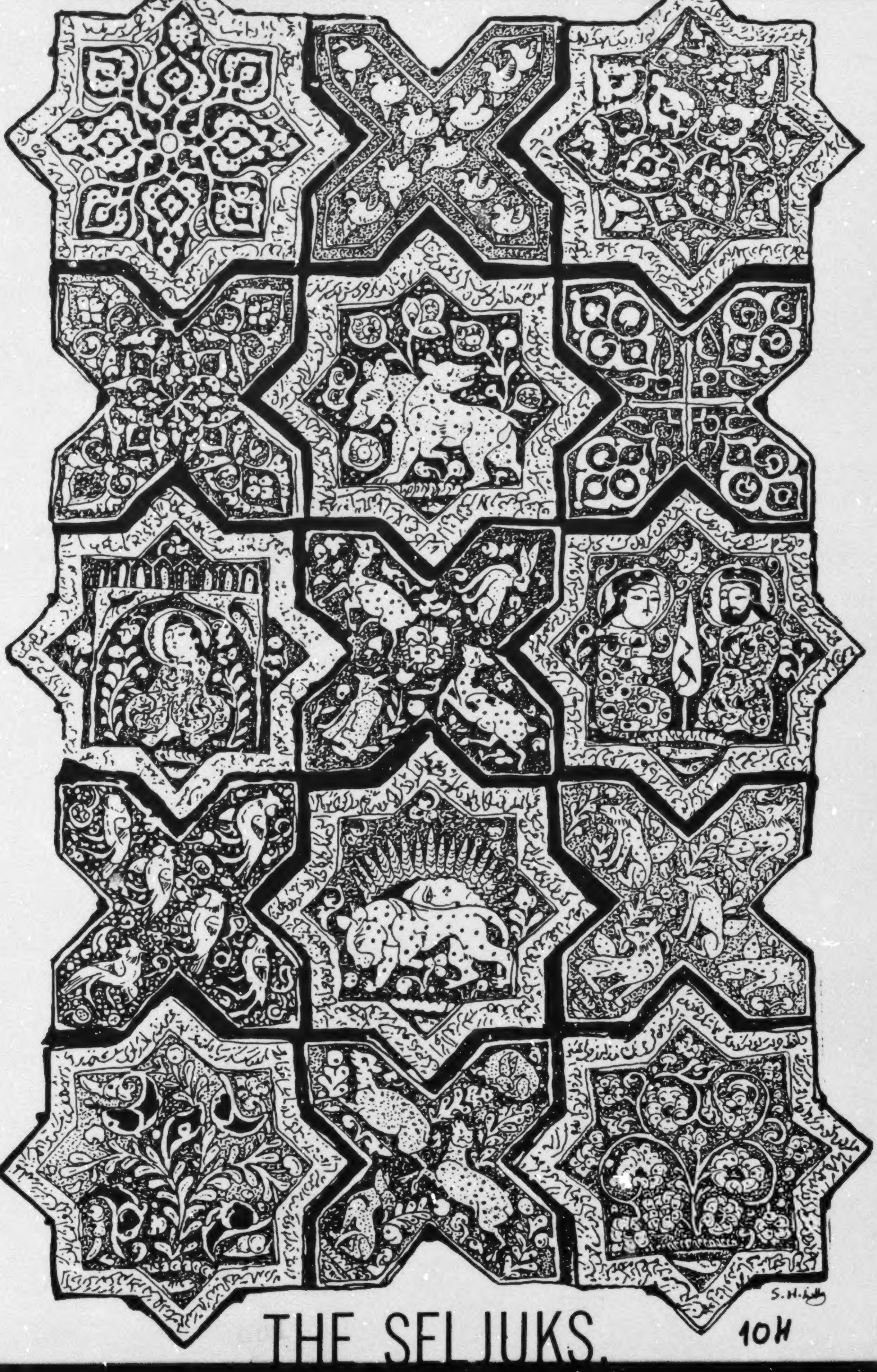
Tiles decorated by this method were first used in large numbers by Shah Abbas in his new capital of Isfahan at the end of the 16th century. His building programme was so vast that to use tile-mosaic alone would have been too expensive and time consuming. "Haft-rangi" means seven-colour and is so-called because it was a method of painting a design on a tile using different glazes simultaneously.

The tile were made from pure clay mixed with 5% -10% sand shaped in boxes usually about 20cm(6½") square. When they had been dried in the sun they weremoistened with a cloth and smoothed by rubbing with a flat stone. After drying the tiles were glazed with a mixture of pulverized white river pebbles and a faience glaze of crushed stone and sodium carbonate. The tiles wereleft to dry once more and then fired for six hours and left to cool for two days. Then the tiles were laid out in the shape of the panel and the design pounced on through a stencil.



Tile covered with opaque white glaze over which are laid blue and tourquoise glazing, in addition to red enamel decoration and leaf gilding. ht. 25·4 cm. wdth. 42·5 cm. Persia, c. 1400. The 'Haft-Rangi' technique.

Pigments were made from metallic oxides mixed with body paste, glass and gum tragacanth,painted onto the tile once a line of manganese had been laid on the outlines to prevent the colours from running together. After painting, the tiles were left to dry for a day and then fired once more.



THE SELJUKS.

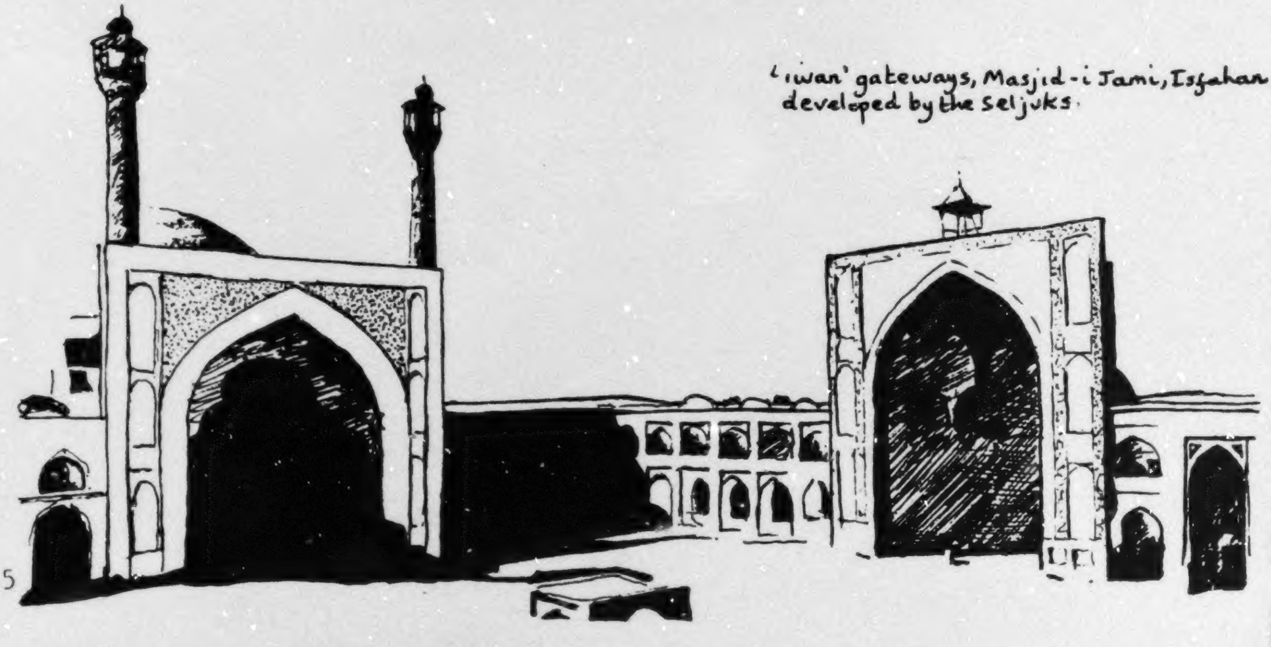
10H

In the middle of the 10th century a Turkoman chieftain named Seljuk led his clan westwards from the Khirgiz steppes of Turkestan and settled in the region of Bukhara where they became fervent Moslems. Pushing further west they captured Baghdad from the crumbling Abbasid dynasty and set about restoring the order and unity of the orthodox Moslem world.

Throughout the period of Seljuk rule from the 10th-13th c. there was a continuous influx of nomadic peoples from the east who established small tribal states controlled by the warrior aristocracy of the Great Seljuks. These small feudal lords were the main patrons of the arts and under them the urban bourgeoisie of merchants and artisans flourished forming organisations like trade guilds to protect and maintain their members' skills.

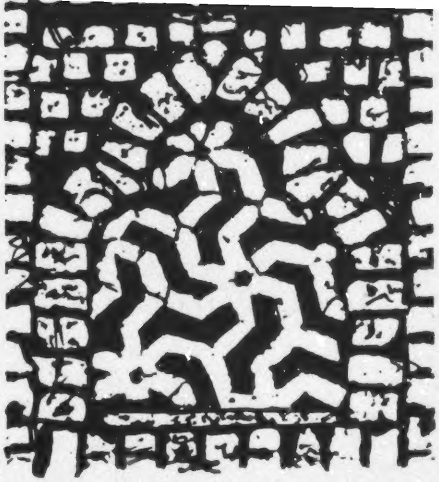
The Seljuks set up colleges, 'madrassahs' (Turkish: 'medresses') to maintain the orthodoxy of the faith. Each medresse had teachers, libraries, copyists, fellowship students and other scholars who united religious, philosophical and legal principals and wielded considerable religious and social influence in the cities.

It was also at this time that Sufism, the mystical and more personal interpretation of Islam, increased in popularity, each group inspired by its own spiritual leader or 'sheikh'. These groups encouraged patronage of guest-houses, kitchens, alms-houses, monasteries and mausolea.



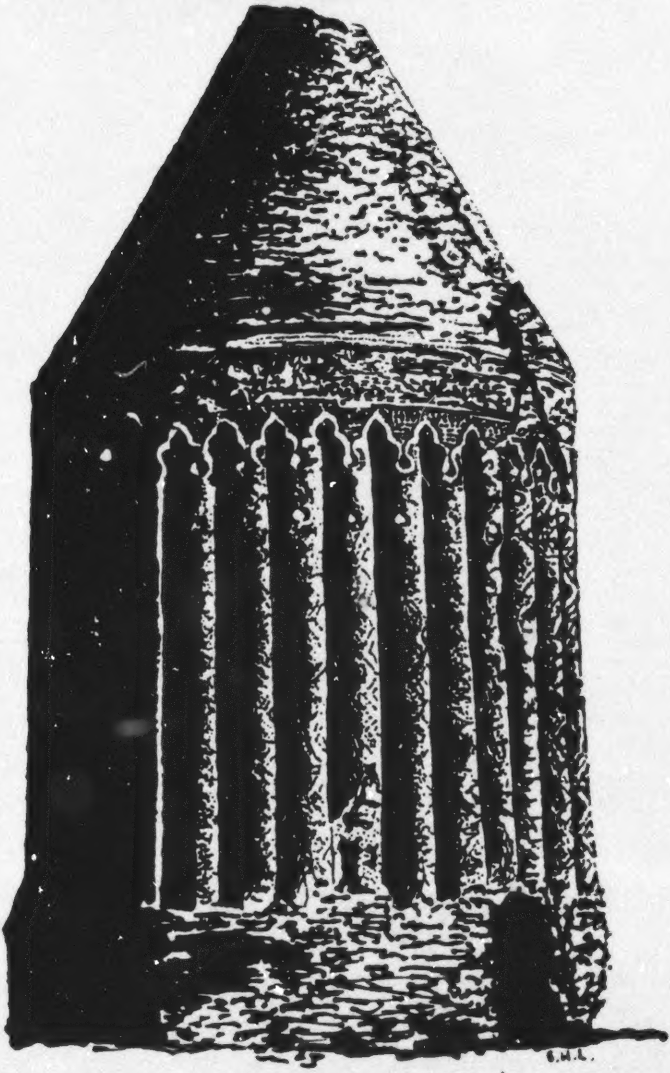
'iwan' gateways, Masjid-i Jami, Isfahan, developed by the Seljuks.

95



Detail of 'naked brick decoration', a niche encloses swastika patterns.

It is in the tomb towers, the burial places of the Seljuk princes that decoration of a new kind appears. These towers of baked brick with conical roofs suggest the shape of nomadic tents- at Ragdan the walls are scalloped like hanging folds, at Gurgan the same idea is used with angled buttresses. The two storey towers with a sarcophagus on ground level may be related to the two stages or burial ritual in Central Asia where the body is first laid out in a tent to be mourned and is then interred in a coffin.



Tomb tower or gunbad at Radgan, Persia, c.1281.

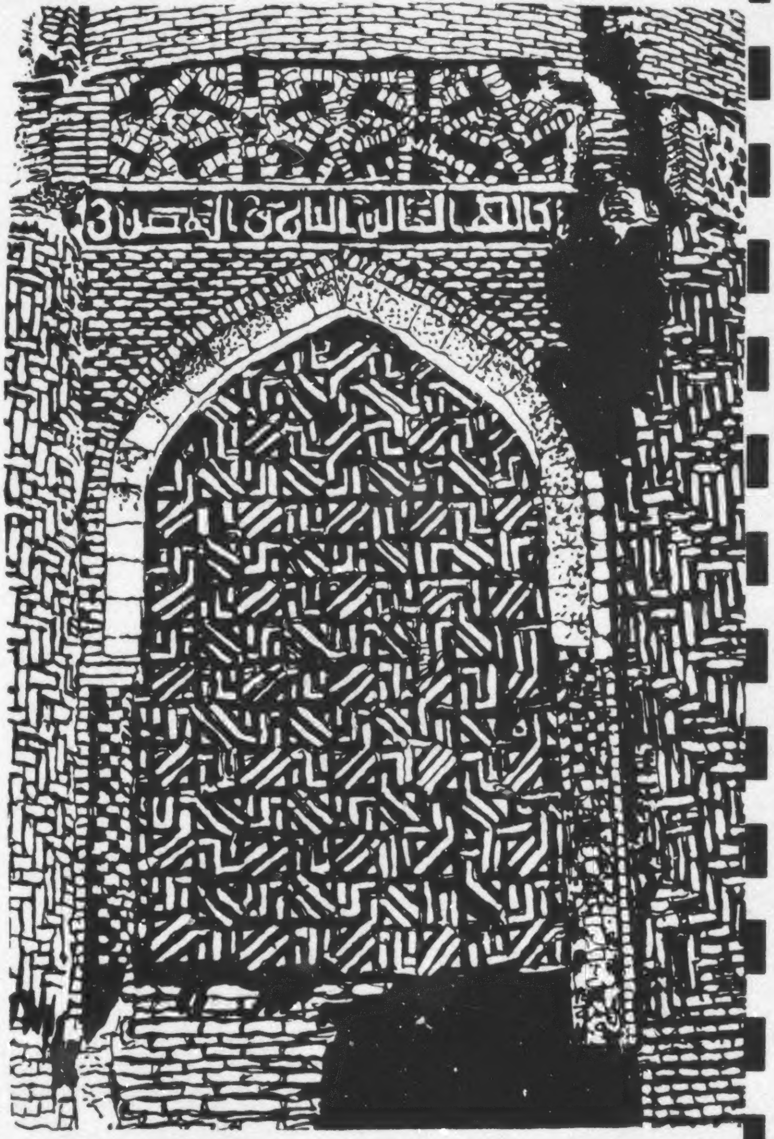
If the shape of the tombs has been taken from tents so too have the decorated walls. Known as the 'naked-brick' style it makes decorative designs by arranging the bricks at different angles or by varying the thickness of the mortar between bricks to build up patterns of light and shade, The effect is very similar to the geometrical designs found in textile weaving and suggests a direct transference from transient nomadic structures to permanent brick buildings.

The introduction of glazed bricks, usually of rich turquoise blue, to pick out the main lines of decoration (Maragha) and letters of inscription (Damghan 11th c.) is an important development, immediately creating a sense of depth and movement. This idea of using colour as an integral part of architectural design and the borrowing of imagery from woven textiles continued in Persia from this time on, although different techniques were to be developed.

One of the motifs taken from the tomb-towers is the 'star and cross' grid. This was taken up by the potters of Kashan who transferred the pattern into individual wall-tiles painted in the lustre technique and often modelled in relief with inscriptions picked out in blue glaze.

Most of the wares from Kashan from 1205-1334 were made by the members of one family. Not only were thousands of high quality 'star and cross' tiles produced to be set in dados in mosques and secular buildings but also complete tiled mihrabs were made in high relief.

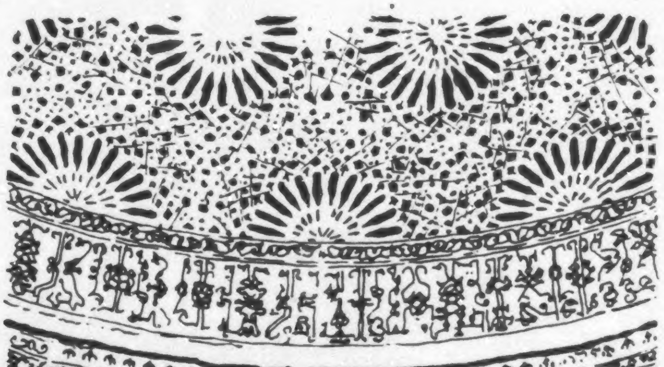
The discovery of a material that successfully imitated the much-prized Chinese porcelain was a revolutionary development for ceramic decoration. Instead of using a red clay body and having to cover it with a white slip before decoration could be applied an artificial body was made from white clay, powdered quartz pebbles and potash. With the addition of water the mixture was used as a glaze to which colours could be added, or if opaque white



An 11th century Seljuk tomb at Qarraqan, Iran, showing different types of brickwork including a band of calligraphy using specially shaped bricks.

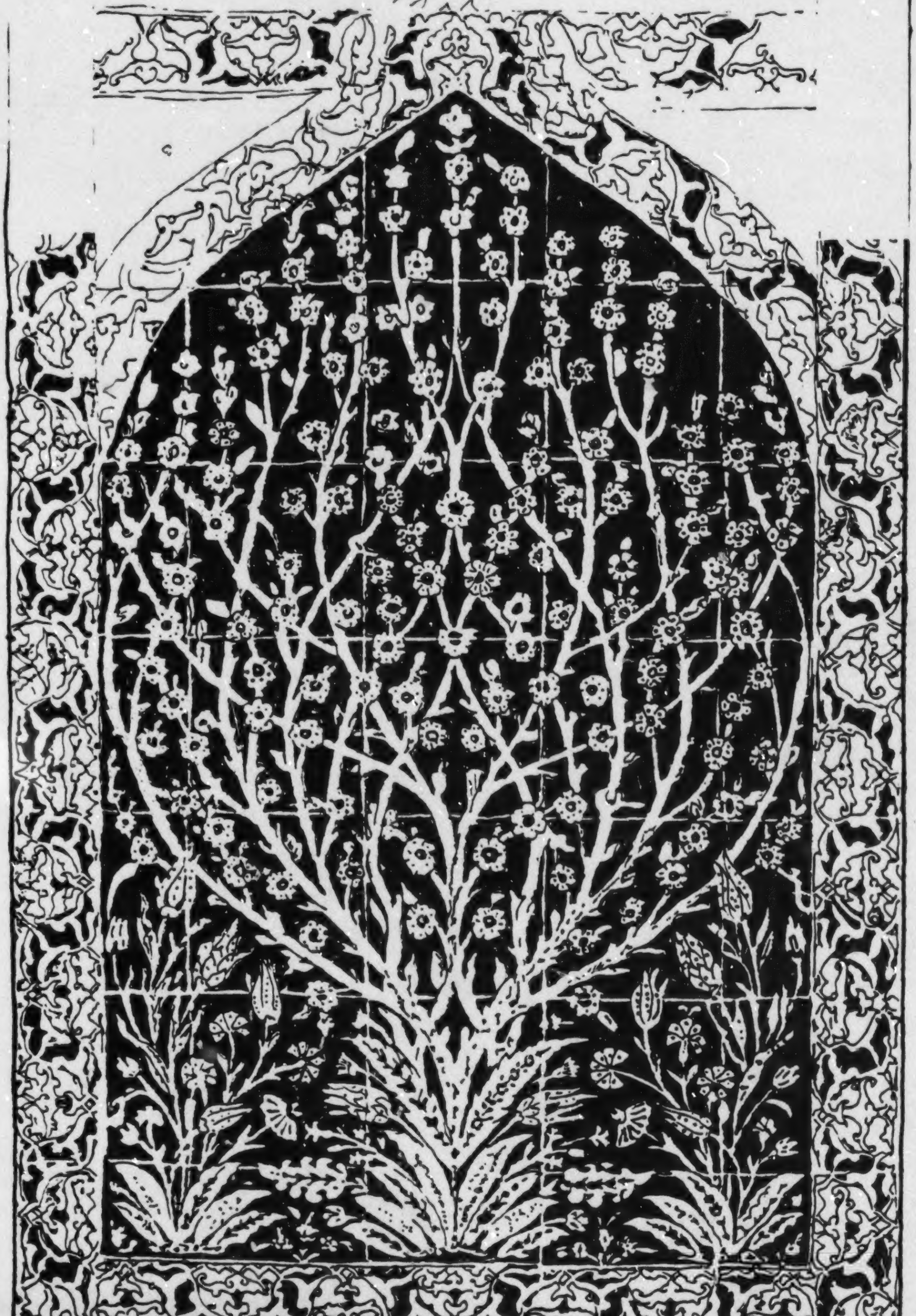
was required , adding tin oxide. These glazes could be applied over decoration that had already been carved, moulded or painted and the advantage in firing was that because glaze and body were of the same material they fused together very well.

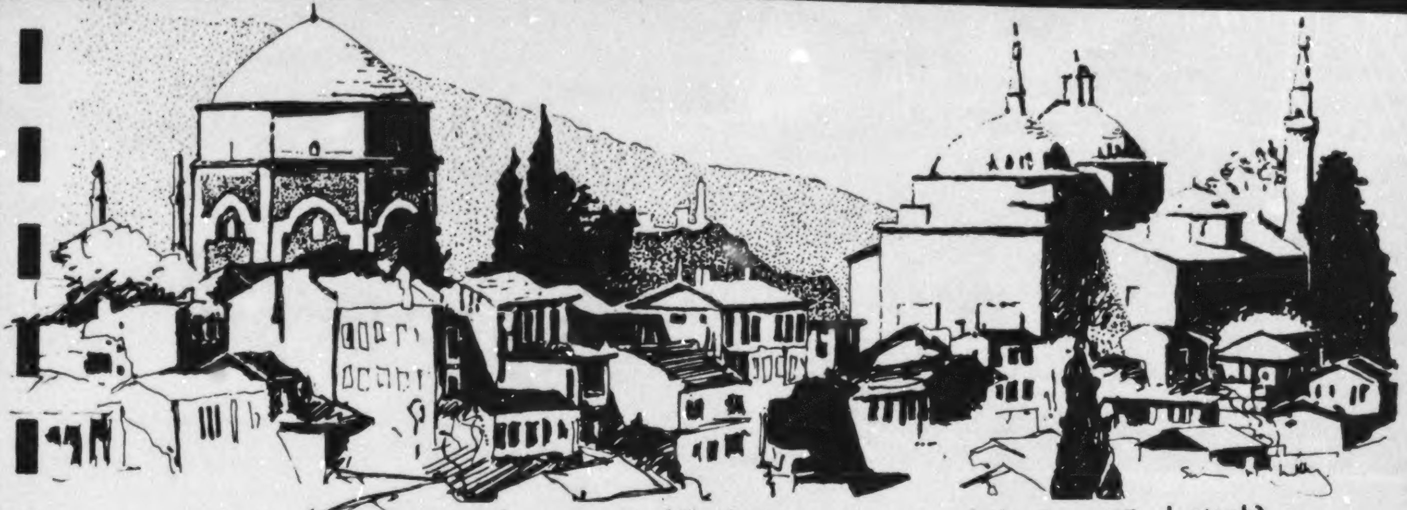
Meanwhile, those Seljuks who had moved west had established control over the Anatolian plateau of Asia Minor and for many years harriad the remaining bastions of the Byzantine Empire. They established a capital at Konya and here for the first time is found in the interior of their buildings the new technique of tile-mosaic in which small sections of ceramic are cut to shape and fitted to make complex patterns.In the Karatay medresse tile-mosaic can still be seen decorating the arches and domes of the rooms.This work may have been done by native craftsmen or by some of the many Persians who were fleeing from the waves of Mongol invasions in the east, but certainly no earlier examples of the technique have come to light anywhere else.



Karatay Medresse, Konya. The earliest example of tile mosaic technique in tourquoise, black and white. The central dome of the main room is open, allowing light to enter. Beneath is a pool which at night could be used to examine the heavens.

OTTOMAN TURKEY.

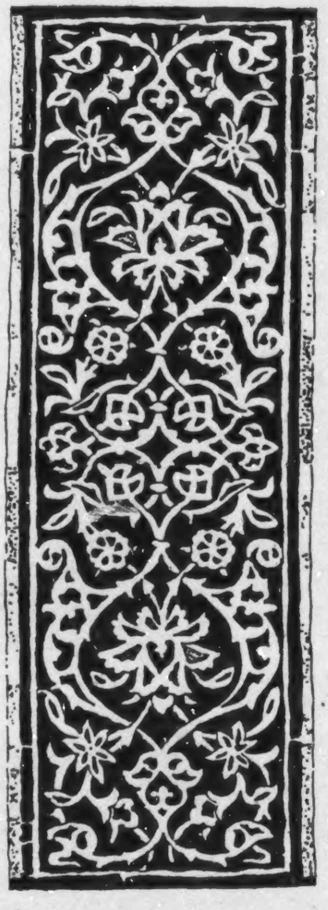




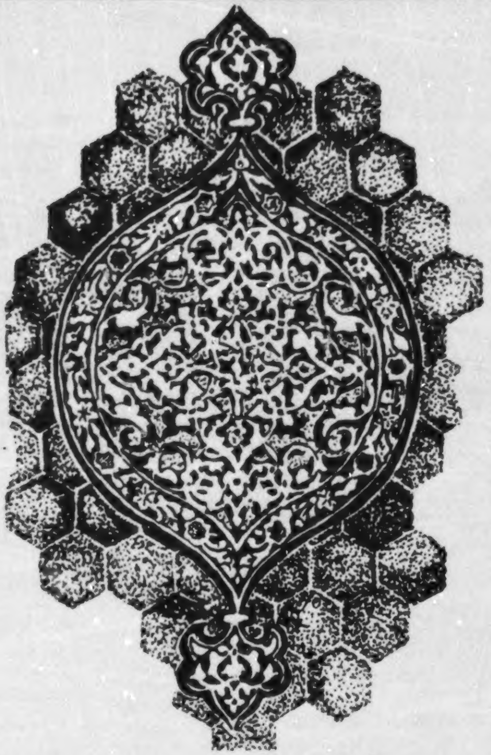
View of Bursa with the Green Mosque and the Green Tomb (left).

As the power of the Seljuks waned a tribe led by Osman, known as the Osmanlis - or Ottomans - gradually assumed power over the other Turkish states in Anatolia and within thirty years of establishing a capital at Bursa in 1324, they had taken large areas from what remained of the Byzantine Empire.In these years Ottoman design continued along the same lines as the Seljuks.

In 1402 Timur invaded Anatolia and beat the Turks at the Battle of Ankara, taking away captive to Transoxiana not only Sultan Beyazid I but also a large retinue of artists and craftsmen to embellish his new capital at Samarkhand. One of these captives was 'Ali ibn Ilyas 'Ali, known in Turkey as 'The Painter Naqqash 'Ali' who was carried off when still a boy from his native Bursa.When he eventually returned home he brought with him Persian craftsmen from Tabriz and together they set to work decorating the Green Mosque at Bursa. This mosque complex and its adjoining tomb, the 'Yesil Turbe'of Mehmed I, introduced into Turkish decorative repertoire the Persian and Chinese designs of the Timurids, the Mongol rulers of Persia.The walls of the tomb have large panels of turquoise tiles, while inside both buildings the lower walls



Tile mosaic, Green Mosque.



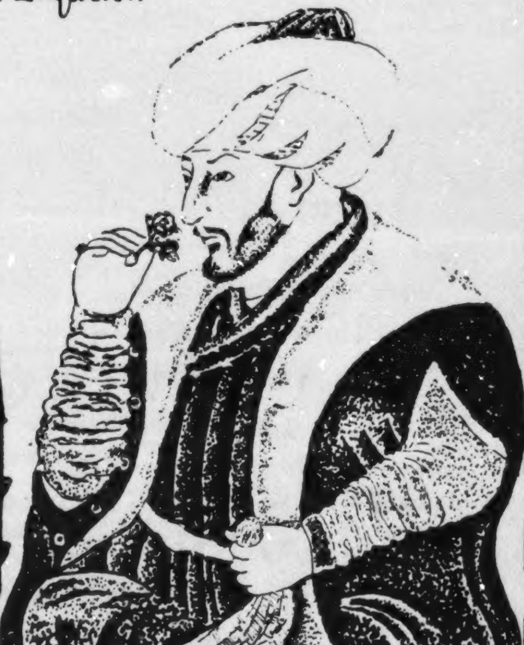
Tile mosaic medallion from the Green Tomb, Bursa, inset with dark green hexagonal tiles.

are covered in turquoise, blue or deep green hexagonal tiles which originally were stencilled with gold patterns.Into these areas of monochrome tiles and on the mihrab wall, galleries and ceilings were set medallions of smoothly undulating floral arabesque in tile-mosaic and 'haft-rangi' that include such Chinese motifs as cloud-scrolls and lotus flowers.

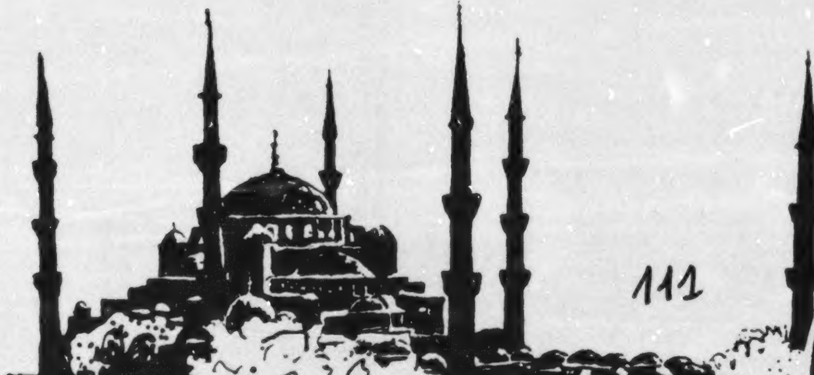
The same craftsmen probably moved on to decorate Murad II's mosque at Edirne in a similar style but using a new method of underglaze painting in blue on white or in black under a turquoise glaze.

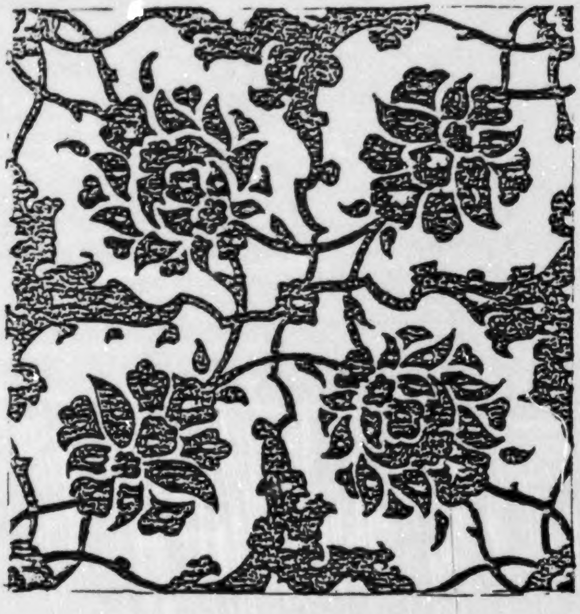
In 1453 Mehmed II "the Conqueror" at last captured Constantinople ending fourteen centuries of Roman rule from the time of Augustus.He soon transferred his capital from Edirne to this new Istanbul.The existing Byzantine architecture inspired sultan and courtier alike and soon new projects sprang up, supplied with tiles from the kilns of Iznik.Now a small, quiet town, in the 15th century Isnik had up to four hundred kilns and produced the finest pottery in the Near East.

Portrait of Mehmet the Conqueror.



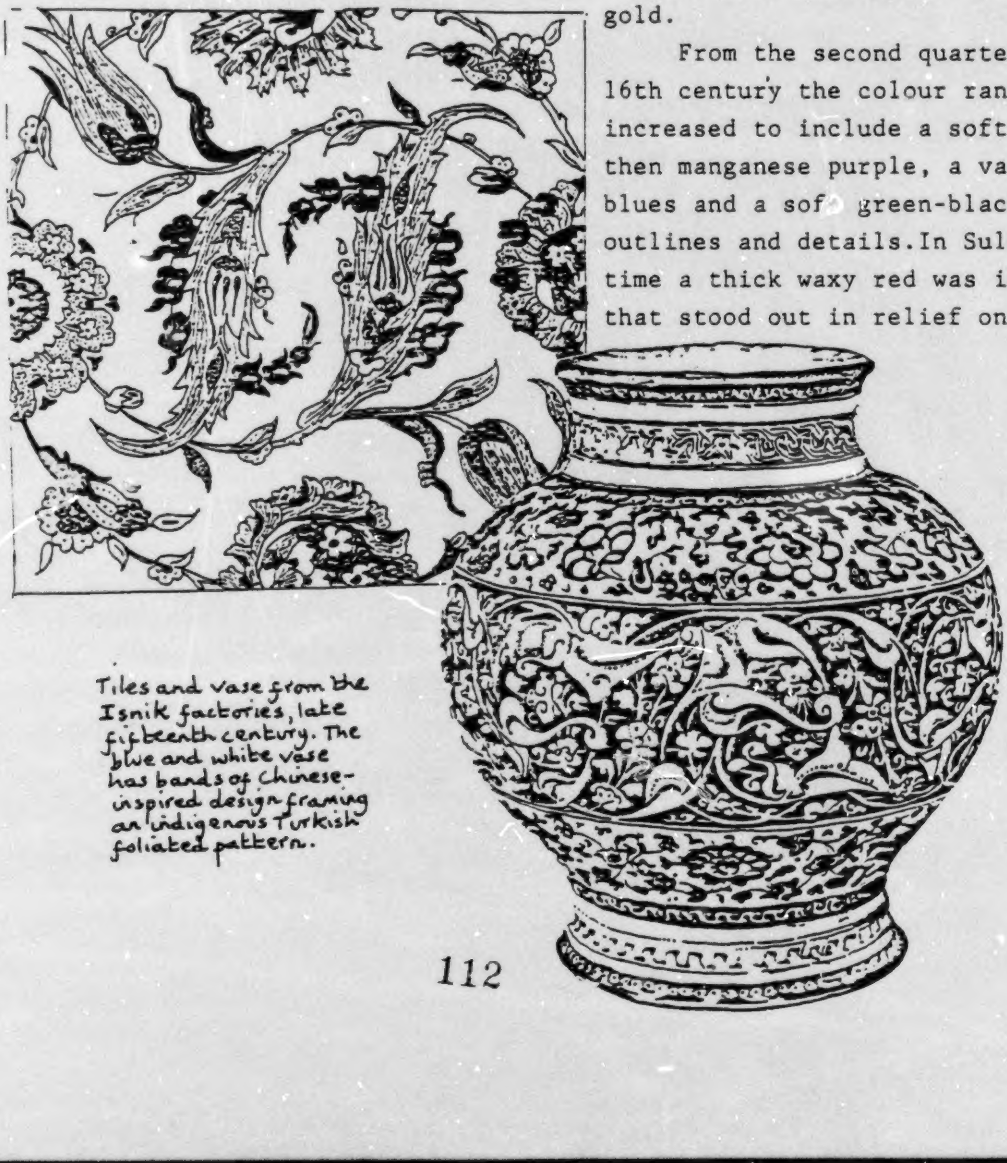
View of the Blue Mosque of Ahmed I.



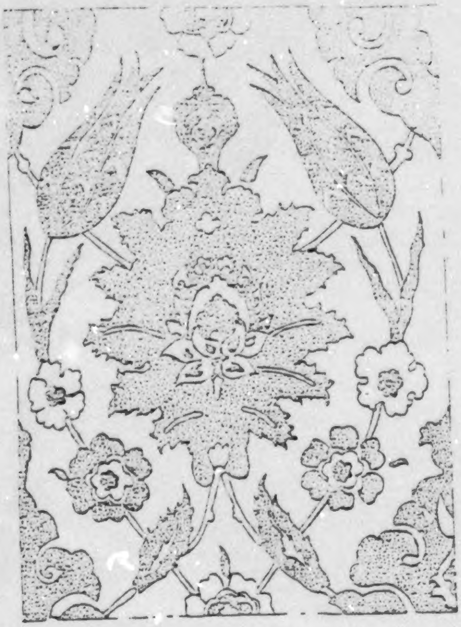


The early work is like Chinese blue-and-white porcelain, but the blue is used in various strengths to give tonal variation and a sense of solidity to the arabesque forms that seem to have come from Ottoman manuscripts.Two different styles are used in contrast to each other: the tight rhythms of the 'rumi' arabesque of traditional Turkish type with long pointed leaves and stems woven into elaborate knots, juxtaposed with the softer curves of the 'hatayi'-of Cathay- style derived from Persian and Chinese designs of the Timurids.Although blue was the main colour turquoise was sometimes added as was unfired gold.

From the second quarter of the 16th century the colour range had increased to include a soft sage-green then manganese purple, a variety of blues and a soft green-black for outlines and details.In Suleyman's time a thick waxy red was introduced that stood out in relief on the tile.

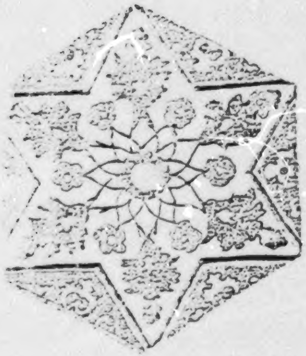


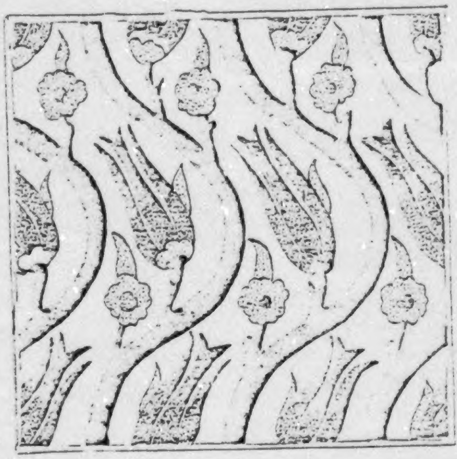
Tiles and vase from the Isnik factories, late fifteenth century. The blue and white vase has bands of Chinese-inspired design framing an indigenous Turkish foliated pattern.

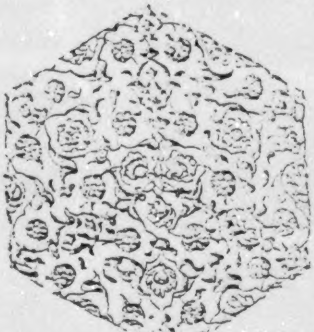


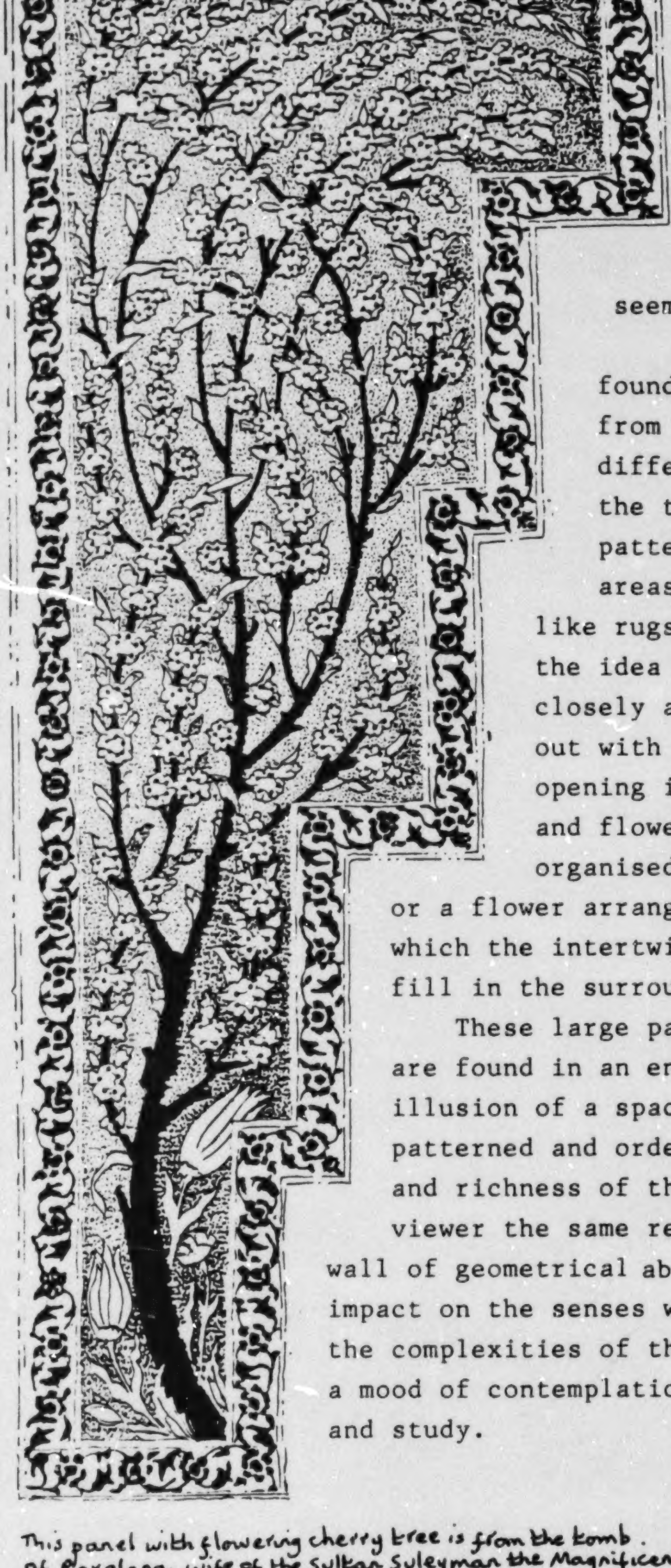
This period in Turkish history has been called "The Tulip Age" - there are records that show in 1579 the palace imported 500,000 hyacinth bulbs, and this was only one of many species that were cultivated.Travellers wrote that from Edirne eastwards there was field after field of hyacinths, narcissi and tulips. Around tombs especially, rose gardens were planted and hyacinths,sweet basil and violets were scattered about the floor of mosques.

It is not surprising that the designs of tiled interiors reflected this passion- it is said that 276 varieties of tulip can be seen on the tiles of 16th century Istanbul as well as other plants: carnations, hyacinths, roses,the pomegranate flower, cypress tree and vine as well as grape motifs, branches, buds and foliated scrolls.







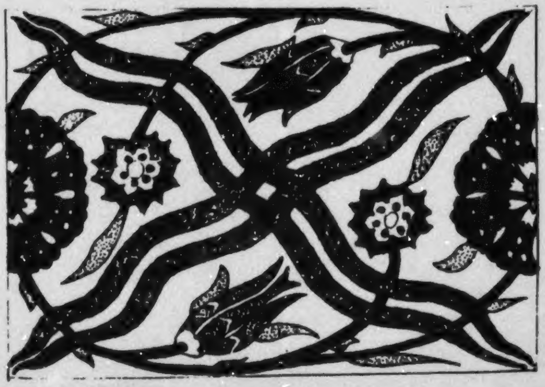


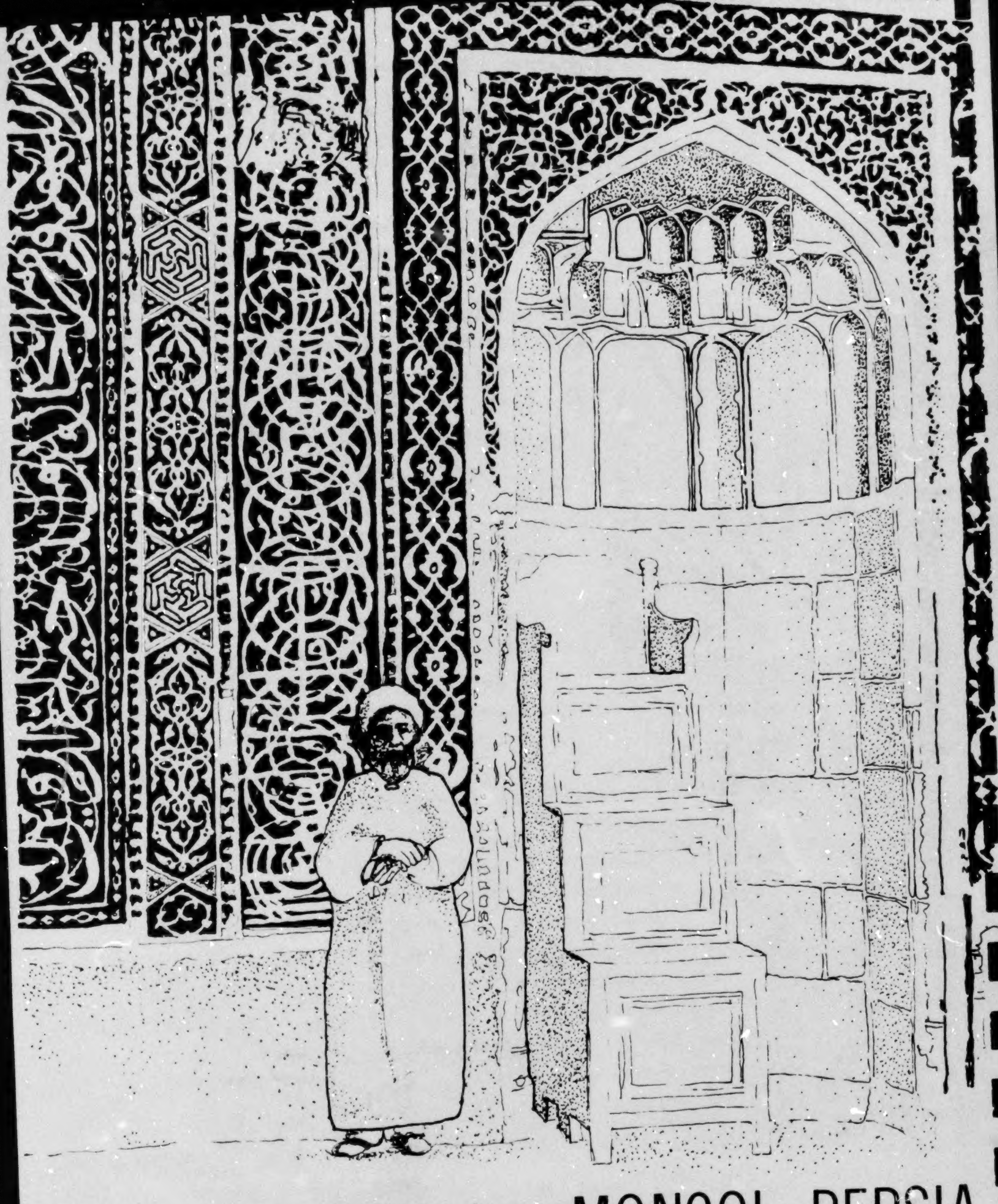
Despite the bold style and brilliant colouring, a light, airy effect is created in the massive interiors of the mosque because the white backgrounds are what stand out while the patterns of flowers seem to float in front of the wall.

When compared with the patterns found at Bursa and Edirne the best work from Isnik shows a fundamentally different approach. In the earlier work the tiles still function as applied pattern making tightly interwoven areas of colour arranged on the walls like rugs or carpets.In the new tilework the idea of the Paradise Garden is more closely approximated.Whole walls are laid out with designs that suggest a doorway opening into a garden filled with trees and flowers.Other panels are more formally organised as if derived from the carpet or a flower arrangement with a central motif from which the intertwining plants elegantly emerge to fill in the surrounding areas.

These large panels are most effective when they are found in an enclosed area where they create the illusion of a space that goes beyond reality in its patterned and ordered perfection.The complexity and richness of the painting brings about in the viewer the same response as if he were gazing at a wall of geometrical abstraction - after the initial impact on the senses where there is a failure to grasp the complexities of the scheme the spectator is led into a mood of contemplation and study.

This panel with flowering cherry tree is from the tomb of Roxelana, wife of the Sultan Suleyman the Magnificent. It was extremely unusual for a Sultan to marry and Suleyman's great love for this European princess shows in the lavish decoration of the interior; he placed her tomb next to his own.



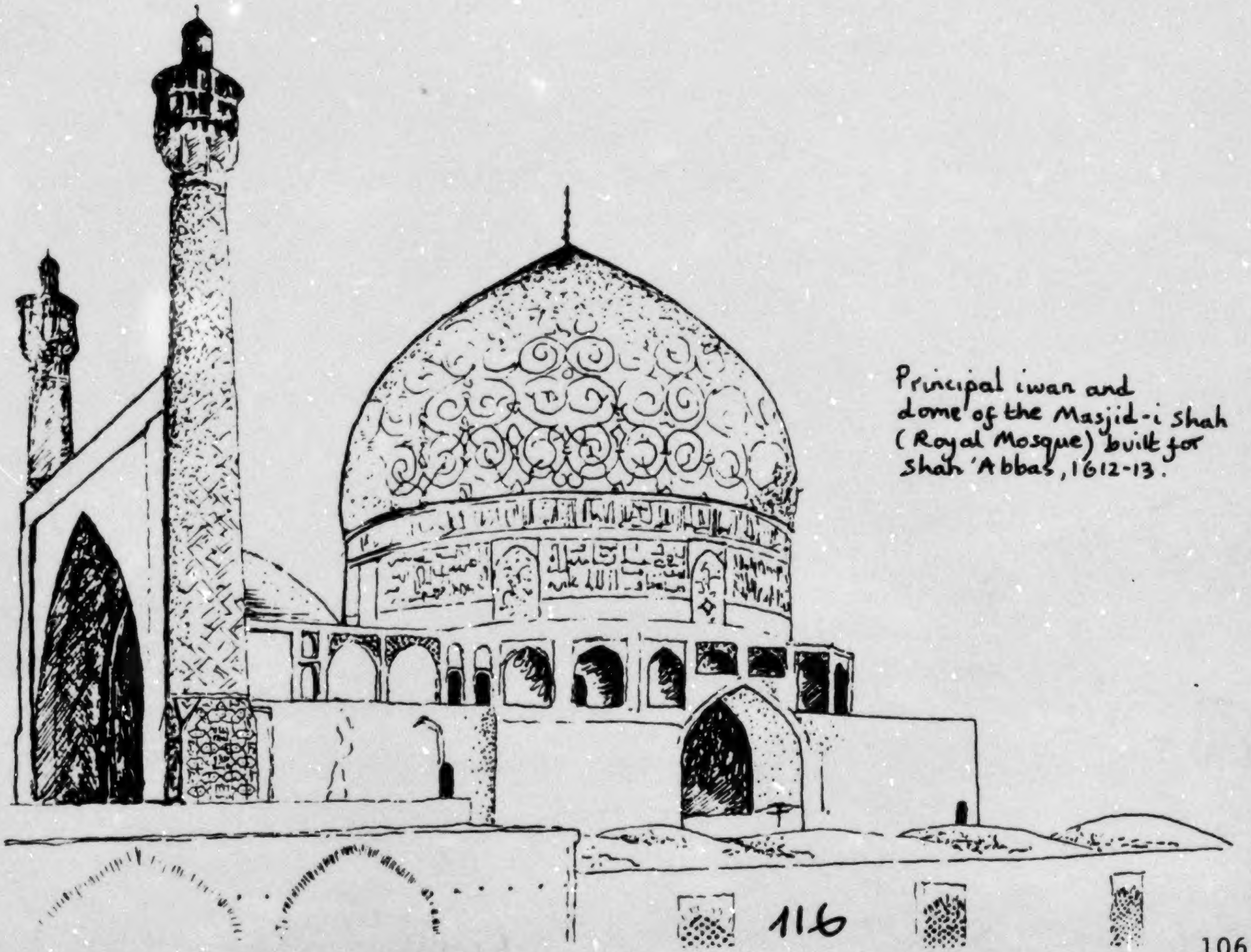


Kirmān, Masjid i-Jami mihrab, signed 'the work of Hajji Bin 'Ihāyat ibn Nizam ad-din Mi'mari of Isfahan'.

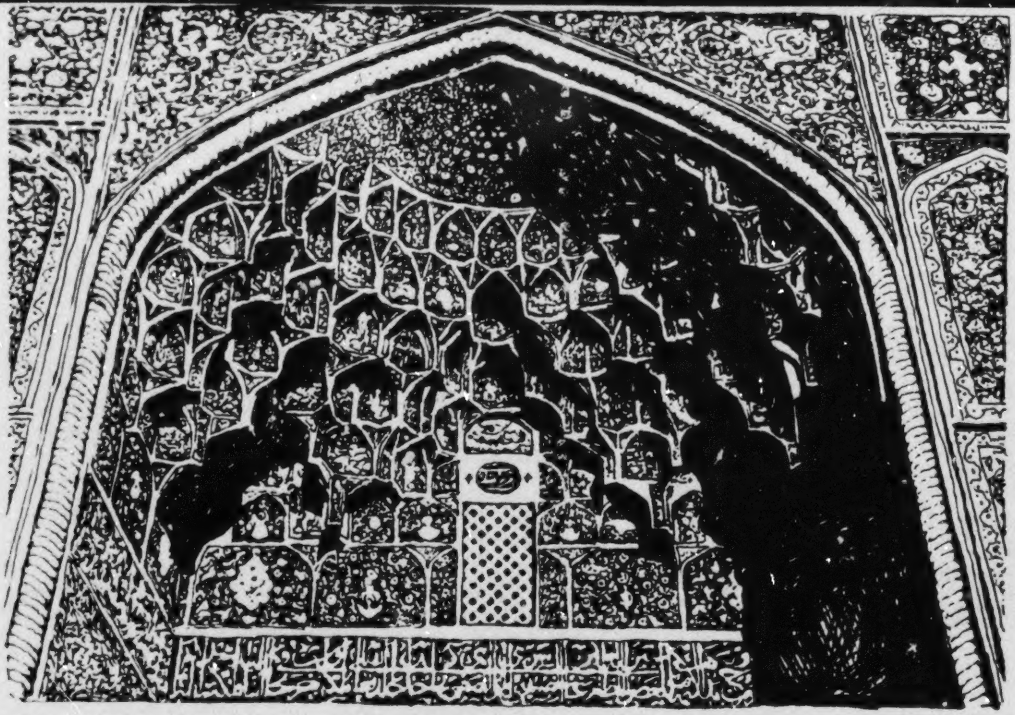
MONGOL PERSIA

At the beginning of the 13th century the nomad tribes that roamed the steppes of Mongolia were united into a confederacy by Jenghiz Khan.Sweeping outwards from their homelands they quickly conquered large areas of China, Western Asia and Russia establishing their rule wherever they went.In Persia millions of people were killed- it is thought that on all fronts,east and west,not less than 50 million people died in the invasions-lands were laid waste cities and towns destroyed or deserted;without the people to regulate and maintain irrigation and crops large areas of the country returned to semi-desert conditions.On capturing Baghdad the Mongols deliberately wiped out the line of Abbasid caliphs who had been the spiritual leaders of Islam for five centuries,so that ever since there has been disagreement over who should rightfully hold the spiritual authority of the Islamic peoples.

With the Crusaders attacking the Islamic lands in the Mediterranean,Islam was in danger of total collapse.However, by the end of the century some stability had been achieved.



Principal iwan and dome of the Masjid-i Shah (Royal Mosque) built for Shah 'Abbas, 1612-13.



The Mongol rulers converted to Islam and became great patrons of the arts. From this point on, whatever the ruling dynasty and wherever the capital was moved, the prime concern was for the enhancement of the environment with beautifully tiled buildings, elaborate water systems, gardens and orchards.

Influences from the Far East and China (now also ruled by a Mongol Emperor), found their way along the Great Silk Route which was now protected from bandits by the Mongol overlords. It is at this time that the first European travellers ventured across Asia to glimpse the courts of the Great Khan and the Emperor of China.

The transport of textiles probably introduced many Chinese motifs into the Persian repertoire- the most commonly found are the dragon, the phoenix, the Chinese lotus, the chrysanthemum and the cloud-scroll. There is also evidence that paintings on paper and silk were brought to the West along with the valued and prestigious Chinese porcelain.

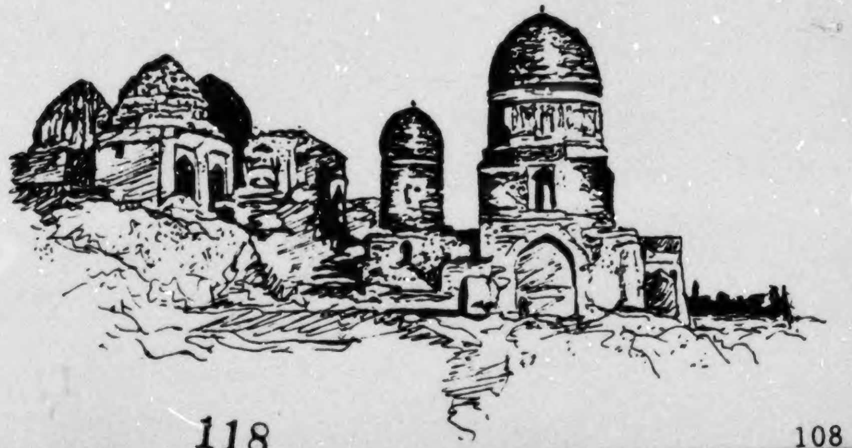
Above: interior of
iwan gateway
showing stalactite
vaulting known as
Muqarna.

Two relief tiles
showing Chinese
motifs : dragon,
lutus, cloud scroll

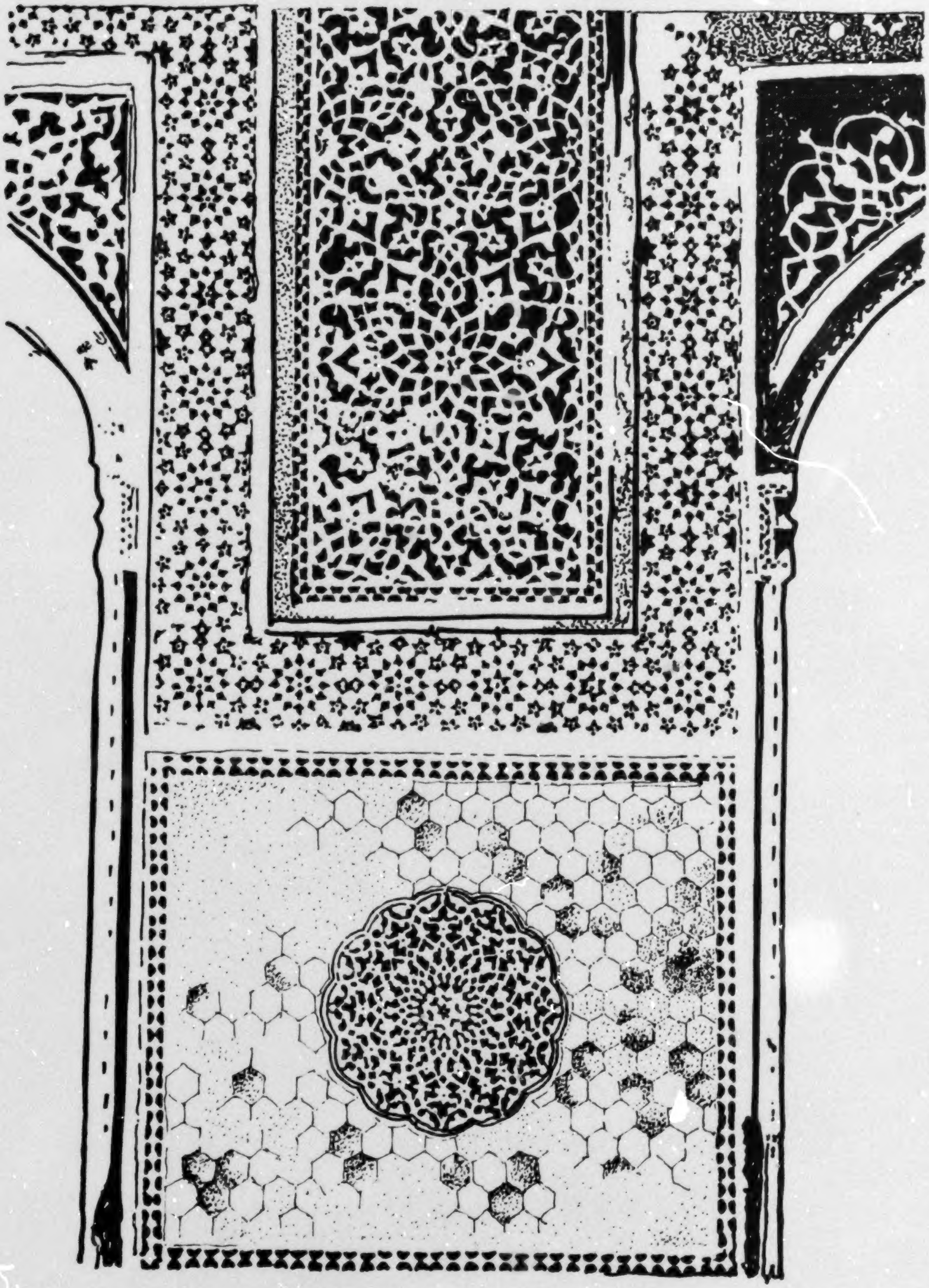
At the end of the 14th century Timur, known to his contemporaries in the West as Tamurlane, led a second Mongol invasion that swept away the, by now failing, dynasties of Persia, removed his capital eastwards to Samarkhand and set about a cultural programme to establish his kingdom as the greatest in the world. Tall bulbous domes covered with mosaic and the monumental iwan dominated the towns and cities of Iran and Afghanistan. Colour was everywhere: in geometrical design, floral patterns and calligraphic inscriptions. The desire to allow cultural and intellectual diversity to flourish under Mongol rule is well summed up in the words of Rashid ad-Din towards the end of the 14th century:

" we have sent, with the utmost celerity, letters and couriers to the scholars of the time and learned of the epoch saying 'Turn the bridle of your setting out towards us; for we would henceforth provide means for you to spread knowledge in peace of mind."

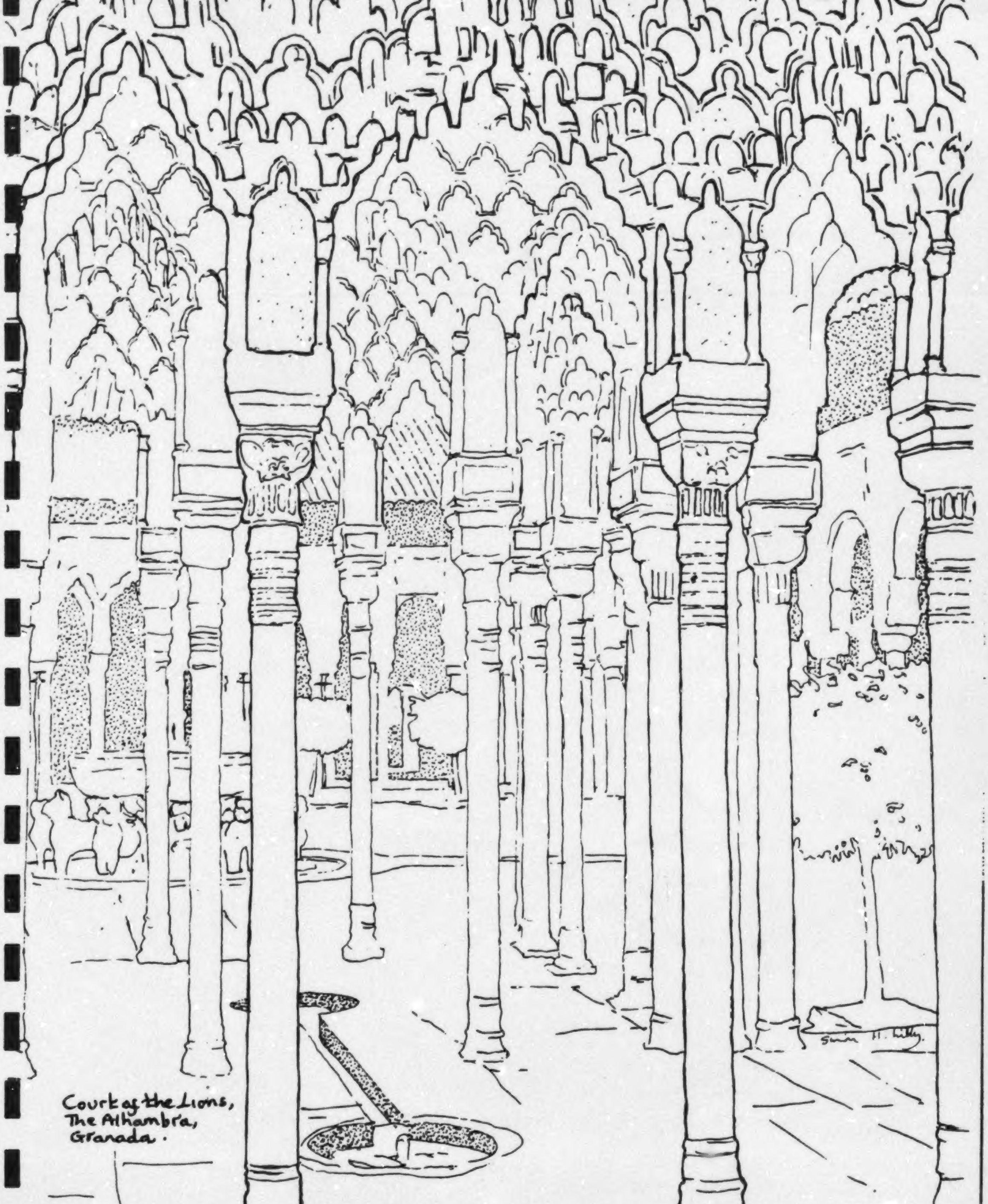
Towards the end of the 16th century Shah 'Abbas chose the town of Isfahan as his capital and set about planning and constructing on a grand scale. Every major building was completely faced with tiled decoration and from 1616, in order to speed up completion and reduce the cost, a new technique of polychrome firing for tiles, called "haft-rangi" or seven-colour, was introduced alongside the mosaic faience. This allowed the designs to be spread across a panel of tiles instead of being laboriously cut and assembled in a bed of plaster, and although the new method lacked the brilliancy of colour, when combined in the same ensemble the contrast of colour and texture is very effective.



The Shah-i Zindeh necropolis of the Timurid princes and their families from 15th-16th cents. built at the Mongol capital, Samarkand. This kind of skyline features the tall bulbous domes of the period. All these buildings are highly decorated with tile mosaic.

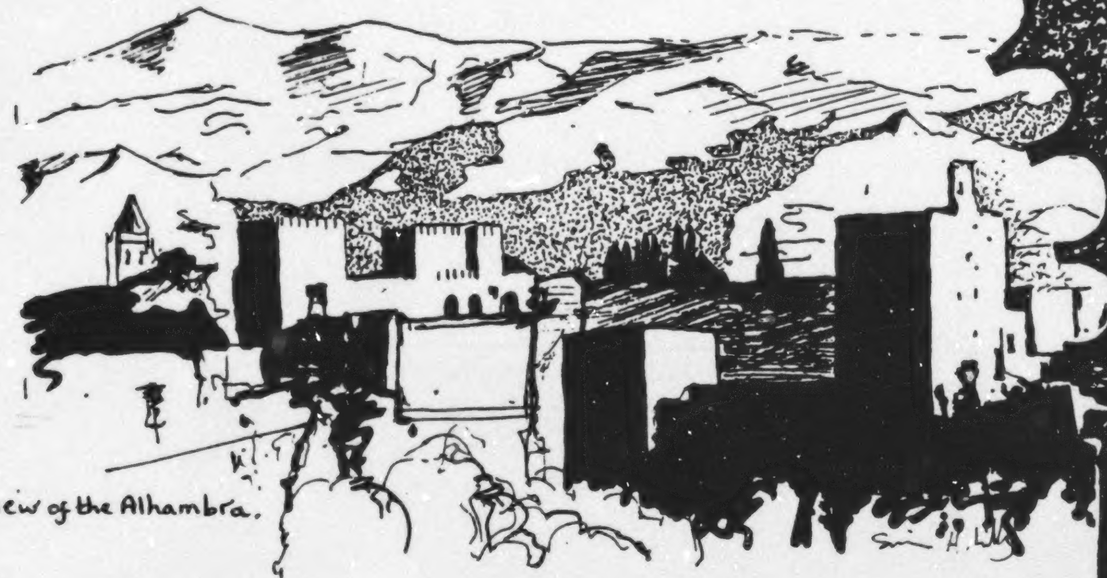


Masjid-i-Jāmi, Yazd, Persia. Tile mosaic decoration of the south-west iwan revetments.



Court of the Lions,
The Alhambra,
Granada.

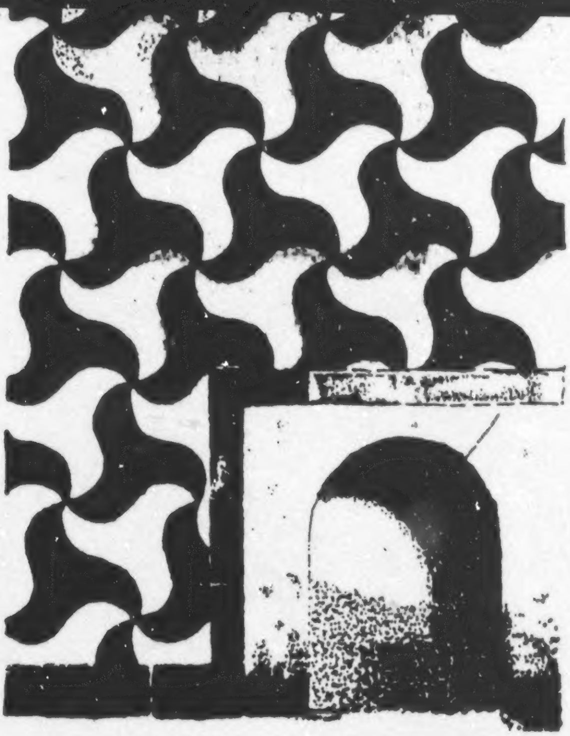
SPAIN AND NORTH AFRICA.



View of the Alhambra.

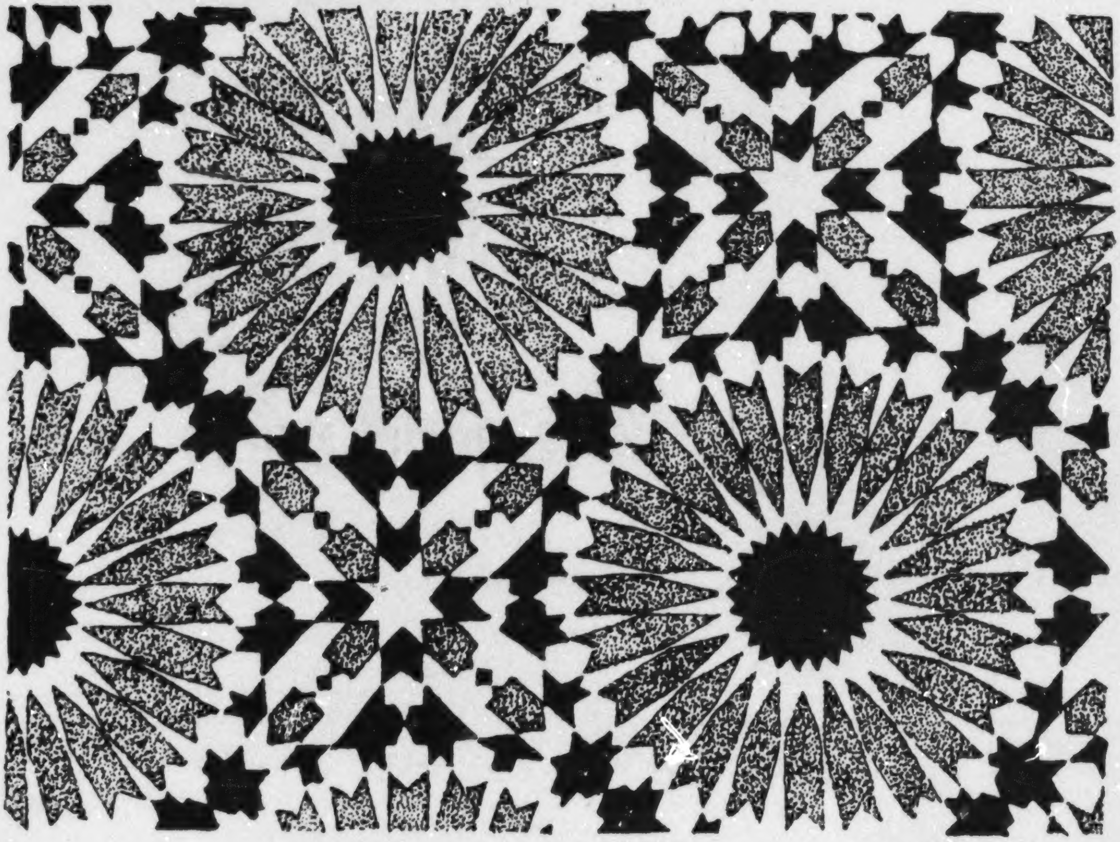
In the struggle for power between the Abbasids and the Umayyads in the 8th century only one Umayyad, the son of the last Caliph, managed to escape to Spain where he founded a new dynasty.Spain had just been conquered by the Berbers of North Africa. These people had originally been recruited by the Arabs as soldiers but they had not been sympathetic to their commanders, and so the new ruler was only grudgingly accepted as an emir.His successor was named Caliph and the Umayyad capital established at Cordoba. The decoration of this time was largely derived from the visible Classical remains and used the same materials of stone and marble.

At the beginning of the 11th century the Umayyads died out and petty rulers fought for supremacy over the empire of the lords of Cordoba. At this time the Christians in the north sought to take advantage of the weakness of government and attempted to recover their long-lost territories.The Sultan of Seville however, called for help from the Almoravids, a race of stern, warlike Berbers from Mauritania , who drove back the invaders but in return made for themselves a province of Spain ruled from Marrakesh. Until the 13th century the Berbers ruled Spain and North Africa under one government, but the empire was eventually split into smaller states. The Moorish rule of Spain came to an end in the last years of the 15th century when Ferdinand and Isabella of Castile captured Granada, the last Arab stronghold in the peninsula.

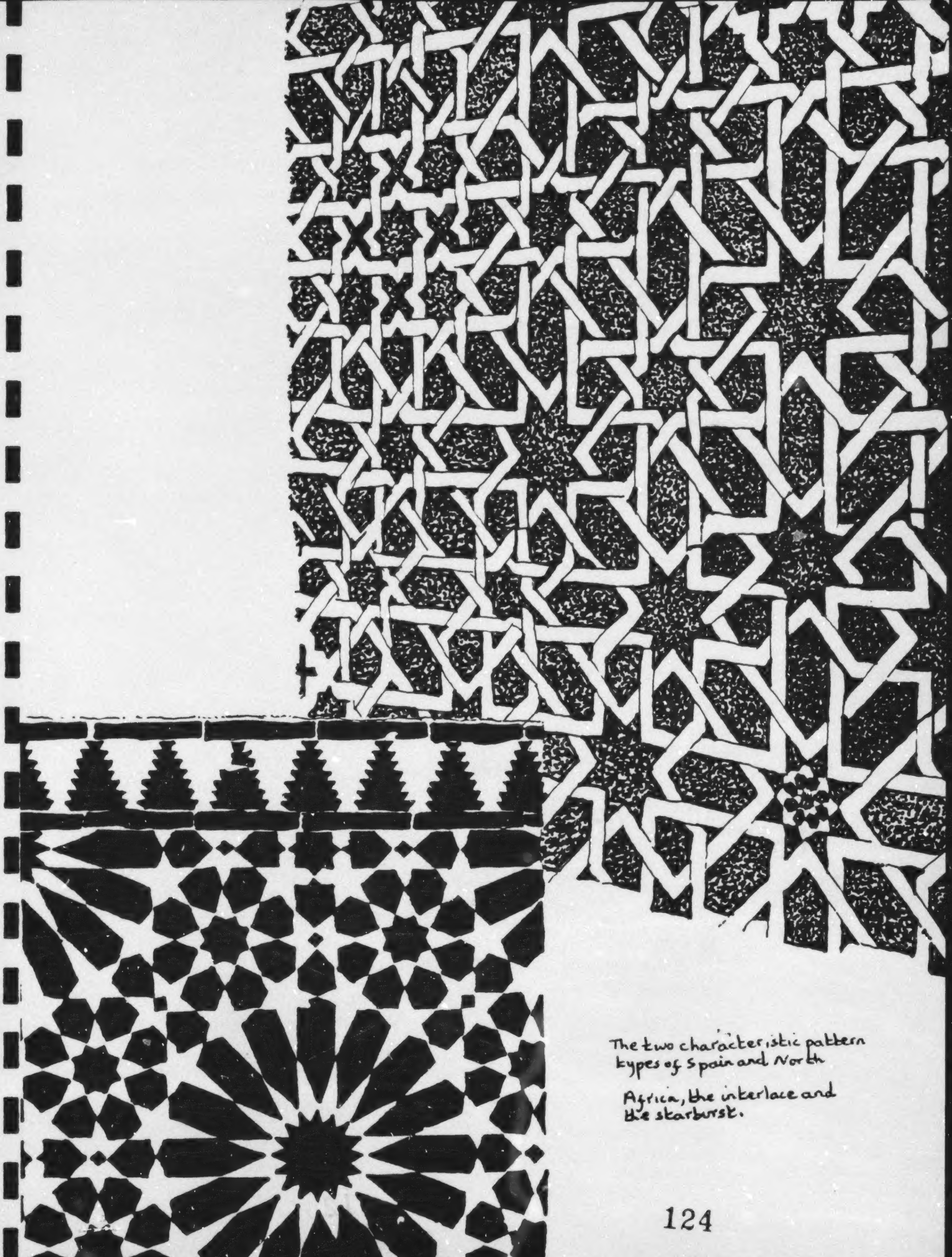


In Grenada the palace complex of the Alhambra - 'the Red' named from the colour of the outer walls, was built by King Yusef I and his son Muhammed V in the 14th century on a hilltop overlooking the town. The building follows the Maghreb tradition of enclosing three courtyards within the walls each connected by a series of rooms. The building contains all the architectural styles of the Islamic past, using the complex multi-faceted stalactite vaulting known as 'muqarnas' and intricately carved stucco and stonework.The delicacy of this work in the archways, niches, columns and domes is a rich combination of classical foliate scrollwork and arabesque designed so that broad patterns appear from a distance and a fine web of interlacing can be seen on closer inspection. The patterned tilework dados in room and courtyard, on the other hand, are characterized by the clarity and purity of geometrical design. These patterns fall into two main categories; firstly,where tiles are cut into geometrical shapes in single, usually bold primary, colours and arranged in repeat patterns using white tiles as a 'ground' that is integrated into the scheme so that there appears to be no gaps or 'empty' space. **The second** using a more elaborate tile mosaic technique creates complex interlace patterns. Throughout Spain, North Africa and Egypt(where stone is used instead of ceramic), this form is much used. The interlace is formed from straight lines of a single thickness in white and the spaces between infilled with bold colours that makes up larger schemes of multipointed interlocking star-bursts, as well as defining the shape of each small section.

These two methods of tile decoration are both extremely effective in creating the visual shift of the 'object-ground' relationship so characteristic of the best Islamic patternmaking.

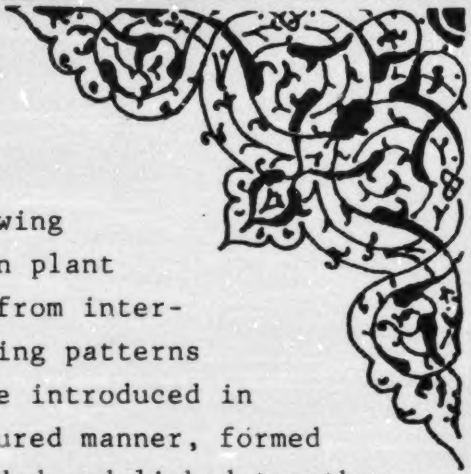


The Mudejars were the Moors who had submitted to Christian sovereignty without renouncing their Islamic beliefs. From the 11th century onwards this group were important in disseminating Islamic artforms into Europe from Spain.In the 15th century the Mudejars were experts at the brocade weaving of heraldic emblems and geometric figures and also made carpets with the surface divided into diamond shapes with octagonal guls on a blue ground or with Spanish coats-of-arms. Even as late as the 16th century 'cuerda-seca' tiles, using the same polychrome firing techniques as 'haft-rangi', were being produced in Andalusia with the characteristic geometric plaitwork design of Moorish origin.



The two characteristic pattern types of Spain and North

Africa, the interlace and the starburst.

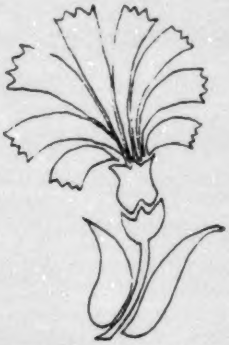


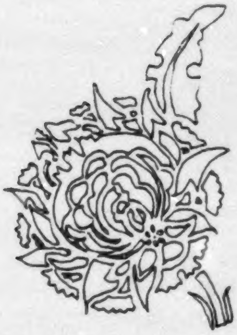
ARABESQUE

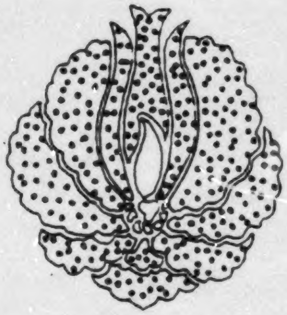
Arabesque describes a type of flowing linear pattern, usually based upon plant forms, but sometimes constructed from interwoven geometric designs. When making patterns in arabesque, linear motifs can be introduced in an entirely fanciful and unstructured manner, formed into symmetrical designs or extended and linked together onto border patterns.

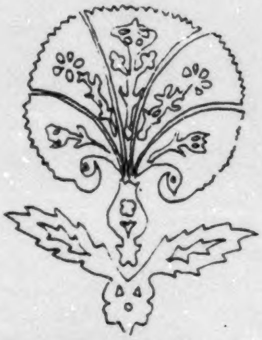
SUITABLE MOTIFS

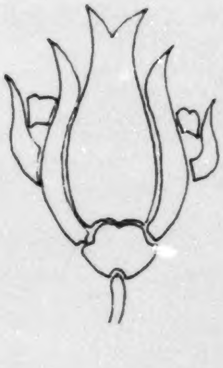
Plant based arabesques are created by the twisting and spiralling of stems, along the lengths of which leaves and flowers are incorporated. Tulips, carnations and roses are typical flower motifs, examples of which are given below and alongside.

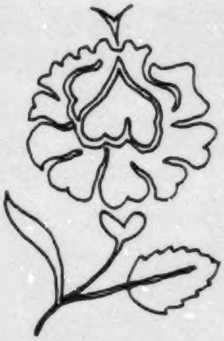






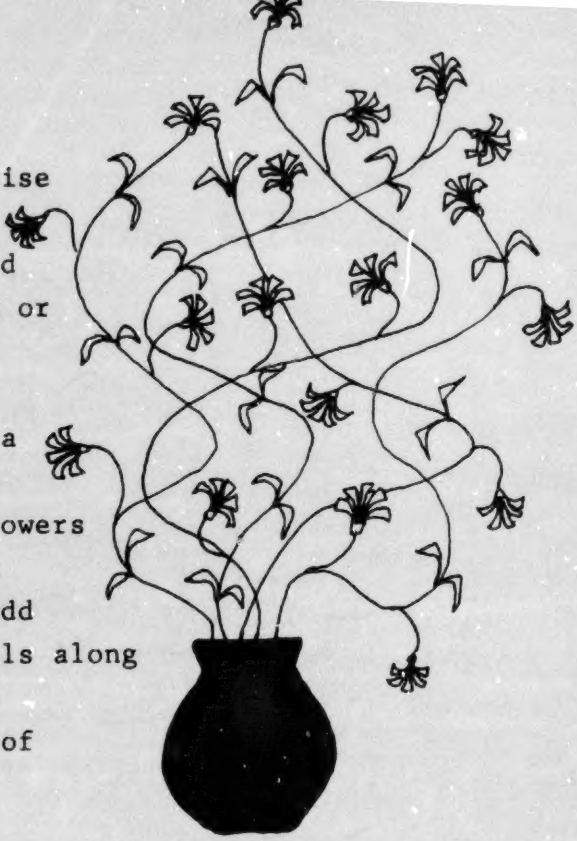






RANDOMLY DRAWN ARABESQUE

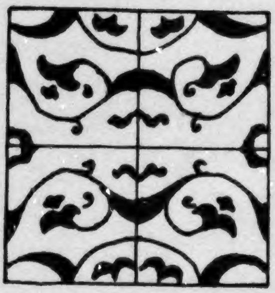
This is an introductory exercise in which the creation of a sinuous pattern can be enjoyed without concern for structure or pattern systems.



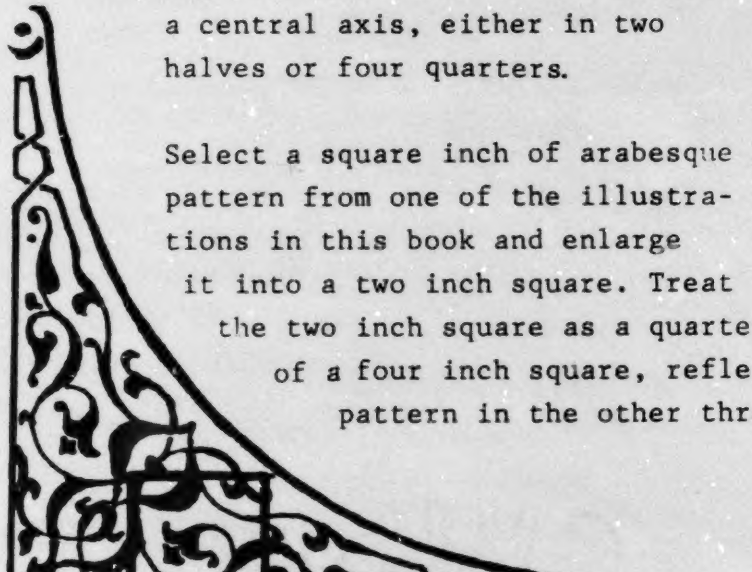
Draw a vase at the bottom of a piece of paper, draw and interlace the stems of the flowers in the vase to form a network covering most of the paper. add leaves and flowers at intervals along the stems, keeping them as as integral parts or outgrowths of the stems.

SYMMETRICAL ARABESQUE

This type of pattern, most often used in panel work, is based on the reflection of a motif around a central axis, either in two halves or four quarters.

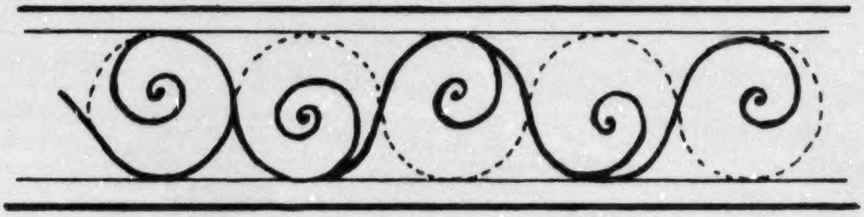


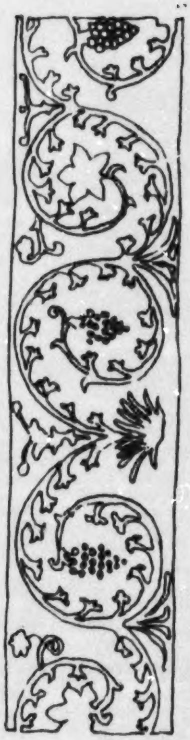
Select a square inch of arabesque pattern from one of the illustrations in this book and enlarge it into a two inch square. Treat the two inch square as a quarter of a four inch square, reflect and reverse the pattern in the other three quarters.

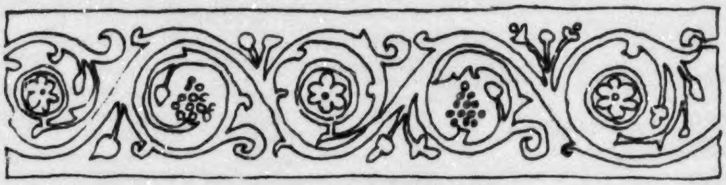


BORDER ARABESQUES

Because it is sinuous, arabesque lends itself easily to border patterns. A simple method for converting arabesque motifs into strip patterns is to arrange them according to systems based upon the circle.in which lines of pattern can be picked out and leaves and flowers added.







GEOMETRIC INTERLACING

This type of arabesque is produced when geometric patterns are interwoven and their basic repeat units are linked together to form a network across the whole pattern area. Examples can be found in patterns based upon circles inscribed within the squares of a grid within which squares of varying sizes can, in turn, be inscribed. The various divisions that can be made within these squares, including the outer square of the grid, provide the networks upon which geometric arabesques can be traced. Basic exercises can take the form of picking out these patterns from a grid system. See figs. 1&2

figure 1.

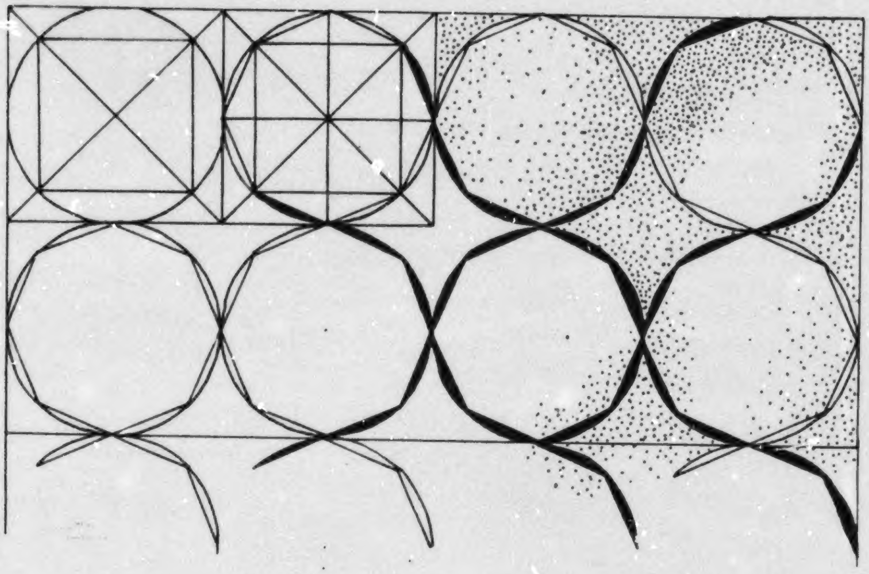
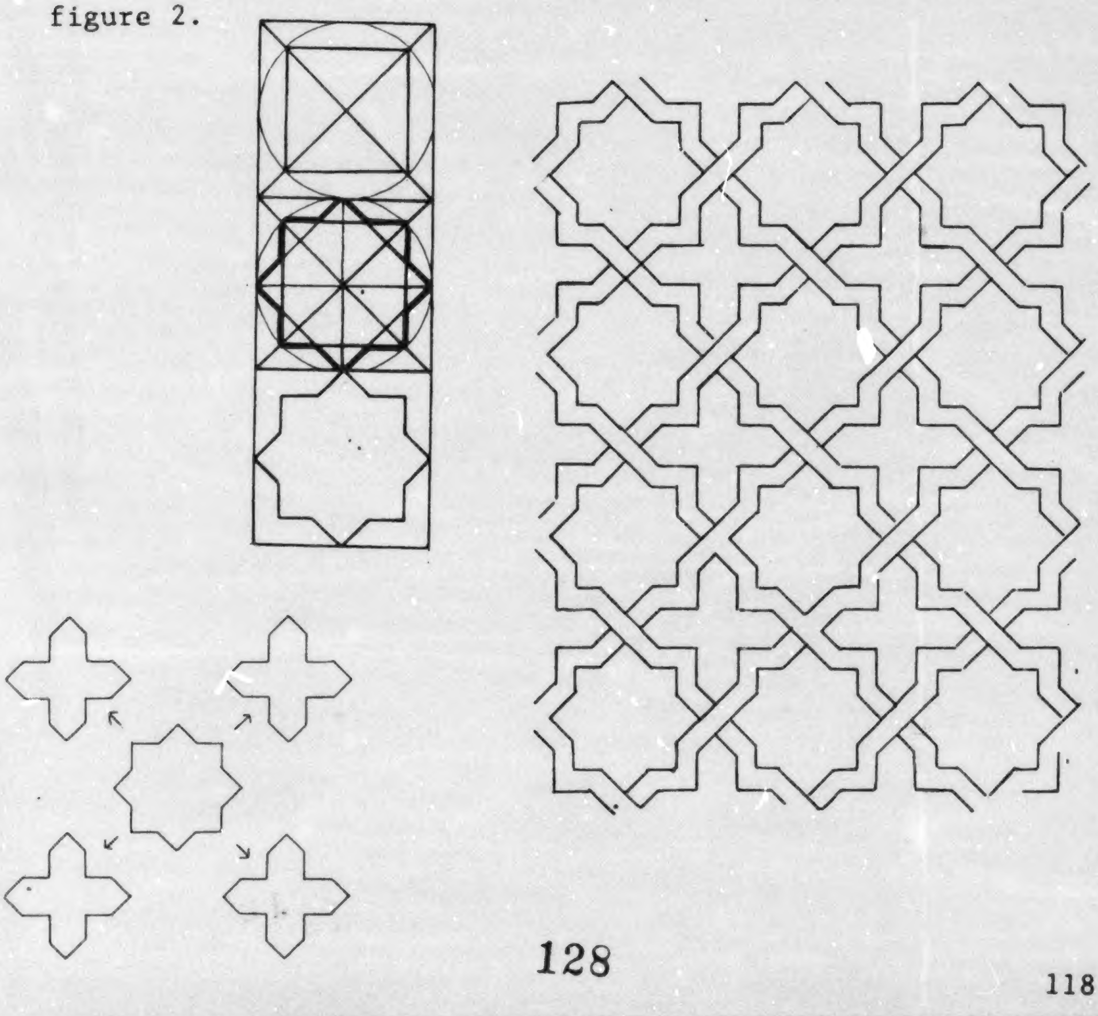
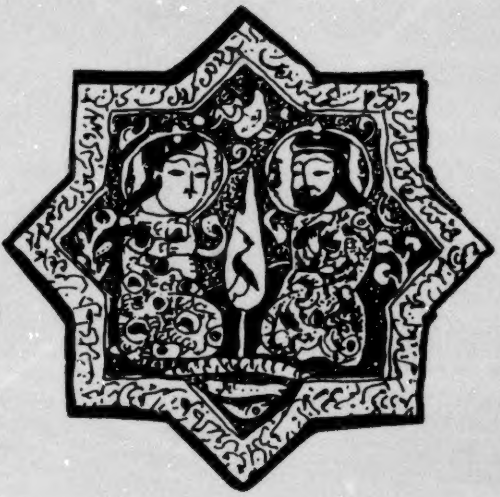


figure 2.





FIGURATIVE PATTERN

Islamic religion closely associates figurative art with idolatry and has only encouraged the representation of humans and animals in non illusionistic and non naturalistic styles. Because the resulting forms are flattened and more diagrammatic they are easily incorporated into pattern designs.

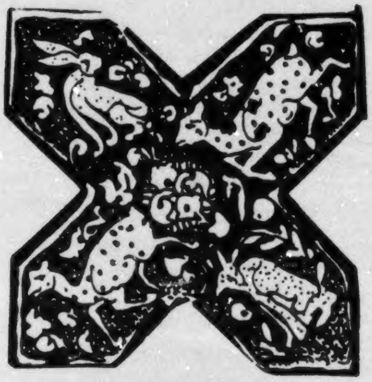
GUIDELINES FOR NON-NATURALISTIC REPRESENTATION

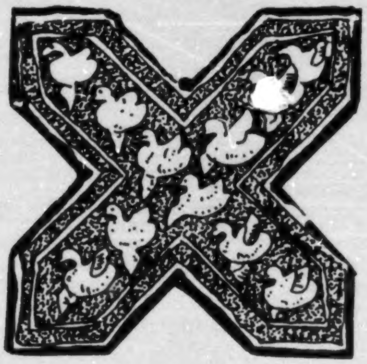
1. Only create a shallow picture space and keep figures parallel to picture plane (usually front or side views) or take a 'birds eye view' and map out picture as seen from above.

2. Do not use shading or give figures shadows.

3. Make colours decorative rather than realistic.

4 Typify human figures so that particular features are not included.

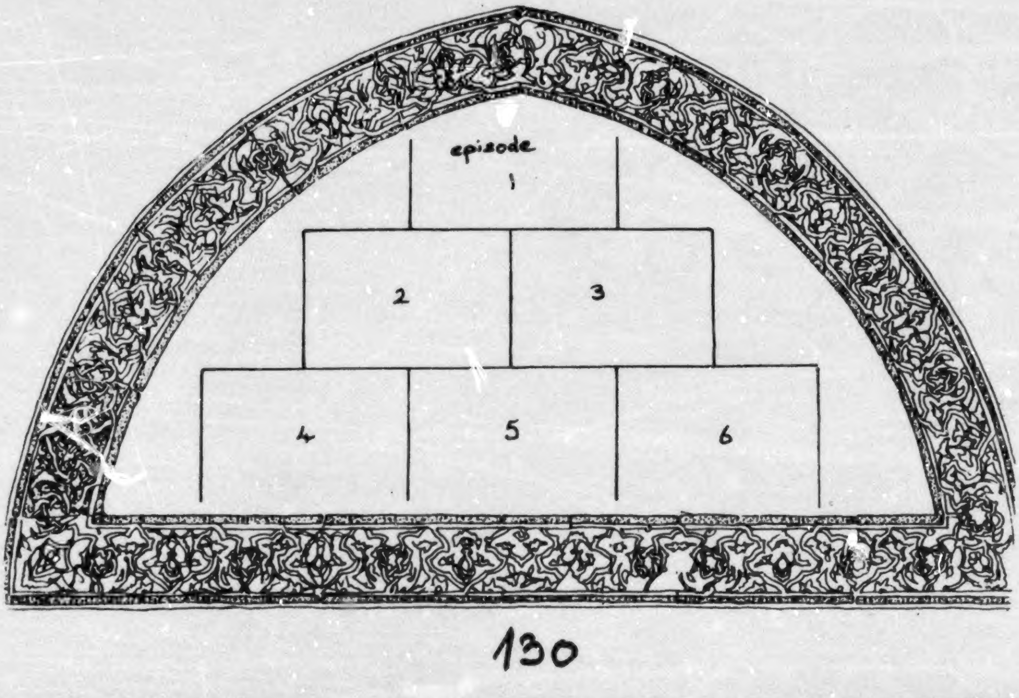




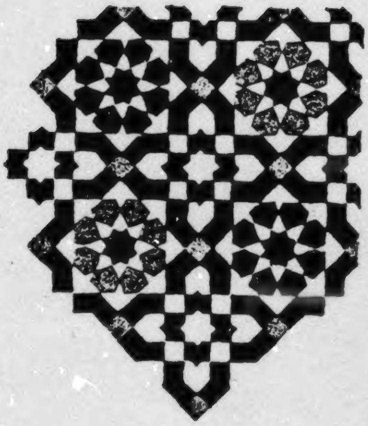
The story given below relates one of the events in the life of Mohammed, the Prophet of Islam. Mohammed started life as a member of the powerful Quraysh tribe, c.A.D.570, he was orphaned at the age of six and brought up by a grandfather and an uncle, he became a shepherd and then rode as a guide with the silk trading camel caravans. The story tells of how Mohammed, then called Kutam, united the warring factions of the Quraysh tribe under a common holy purpose.

Using the guidelines to figurative representation, divide the story into episodes to make up a tile panel and set it into a decorative framework.

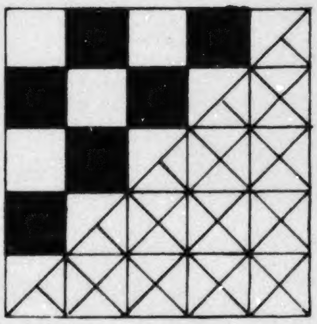
The holiest of Islamic shrines is the Kaaba stone at Mecca, this was once damaged by heavy rains and fell from its niche. Arguments followed amongst the clans of the Quraysh concerning who should replace the stone and it was finally decided to ask the first man to enter the courtyard, this was Kutam. Kutam placed the stone in the centre of his own robe so that all of the clan leaders were able to lift the stone at once and the stone was raised to its niche. Peace had been made amongst the clans by a common religious act.

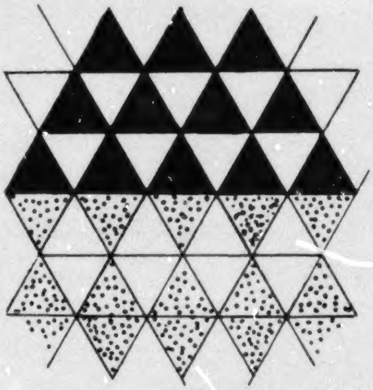


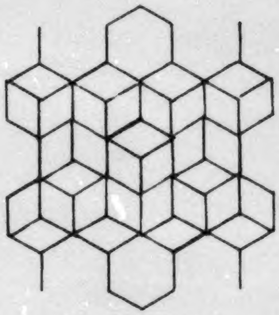
GEOMETRIC PATTERN

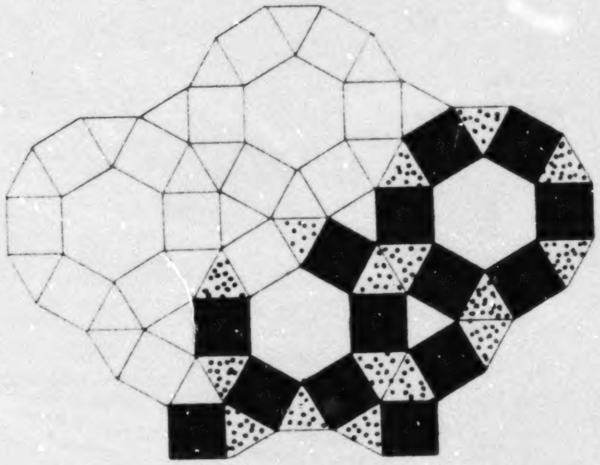


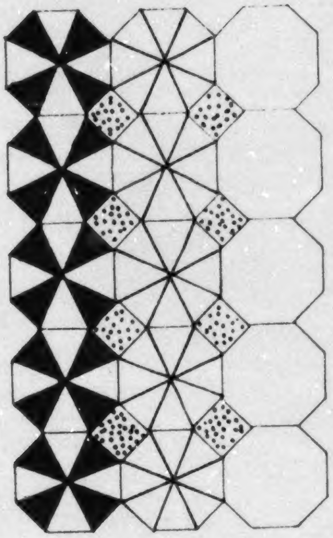
Geometry plays an important part in Islamic pattern making and its presence reflects concepts of a divine order and harmony underlying the universe. The basis of Islamic geometric design is the use of a grid, either regular or semi-regular. Because each grid lends itself to a particular set of divisions and sub divisions, exercises can take the form of the exploration of their pattern potentials.











TEMPLATES

This is a useful method for speeding up the process of making and understanding models of Islamic design. Templates can be made from thick card in any shape and can be used to build up original designs that require a repetition of elements and accuracy of shapes. They are particularly valuable for the creation of geometric pattern.

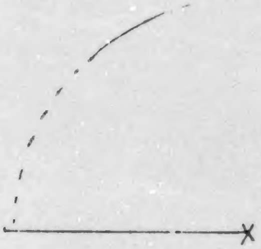
THE CONSTRUCTION OF GEOMETRICALLY SHAPED TEMPLATES

1. Equilateral Triangle

1.

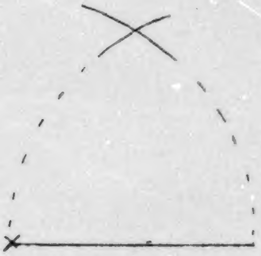
draw a line

2.



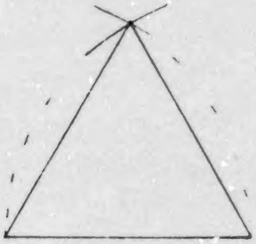
place the point of a compass at one end of the line, extend the arm to the required length and draw an arc approximately above the centre of the line.

3.



placing compass point at other end of line, draw an arc to intersect the first arc.

4.



using a ruler join each end of the line to the point at which the arcs intersect.

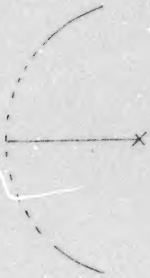
TO MAKE A SQUARE

1. Draw a line.

2. Using the line as a radius, draw an arc above and below the line.

3. Placing compass point at other end of line, reoeat to make two crossing arcs. Draw a line between the two intersects.

4. Using the point at which the lines cross as the centre, draw a circle through the end points of the first line.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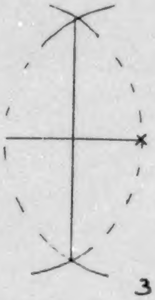
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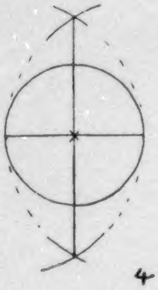
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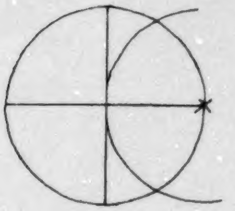
5. Place the compass point where one of the lines touches the circle and draw a semi circle with the same radius as the first circle.

6. Repeat for each point at which the lines touch the circle

7. To make square, draw lines between intersected arcs of semi circles, touching the sides of the circle.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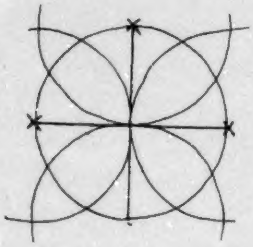
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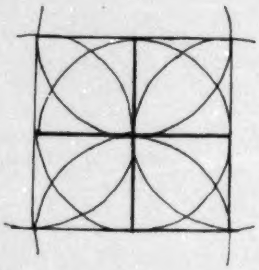
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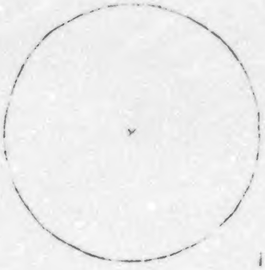
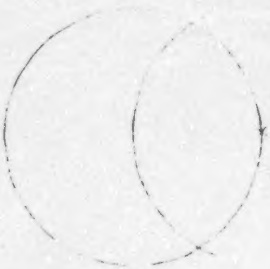
TO MAKE A HEXAGON

Keeping the same radius throughout:

1. Draw a circle.
2. Place the compass point anywhere on the circumference of the circle and draw an arc to cut the circle.
3. Place the compass point on the intersection and draw another arc.



1



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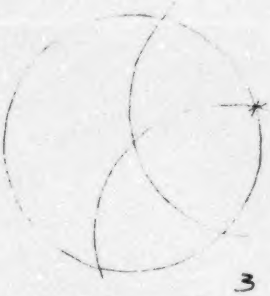
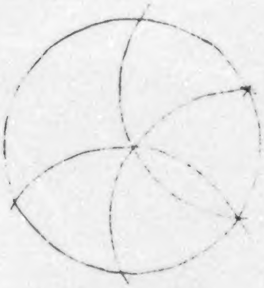
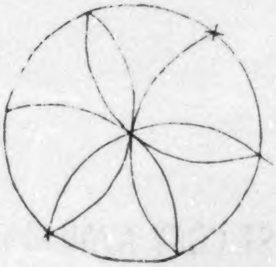
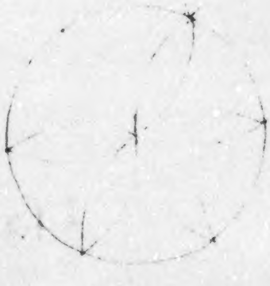


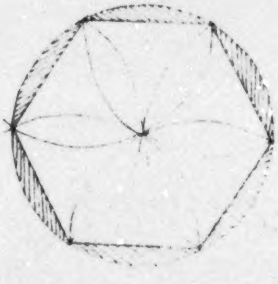
3

4. Repeat from each intersection until six arcs have been drawn.
5. Join all points to make the hexagon.

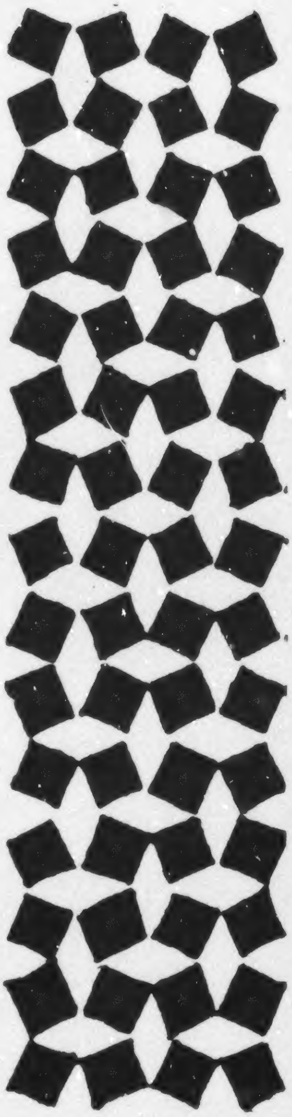








EXPLORING GEOMETRIC PATTERNS GENERATED BY TEMPLATES



Experiment with one template for a few minutes and it will become apparent just how easy it is to make quite sophisticated patterns using one shape.

Suggested Progression of Ideas

1. Use line only to draw around templates in various positions on the page.

2. Select and colour some of the outlines to impose new levels of pattern.

3. Overlap outlines to make a regular division of the pattern into more complicated shapes.

4. Use more than one shape in the same design. (If this is done there must be a relationship between the size of the templates e.g. the length of each side must be the same.

* Both open and closed patterns can be made: closed where the template is placed next to the shape just drawn; open where it does not follow the previous outline exactly but may be touching at some point.

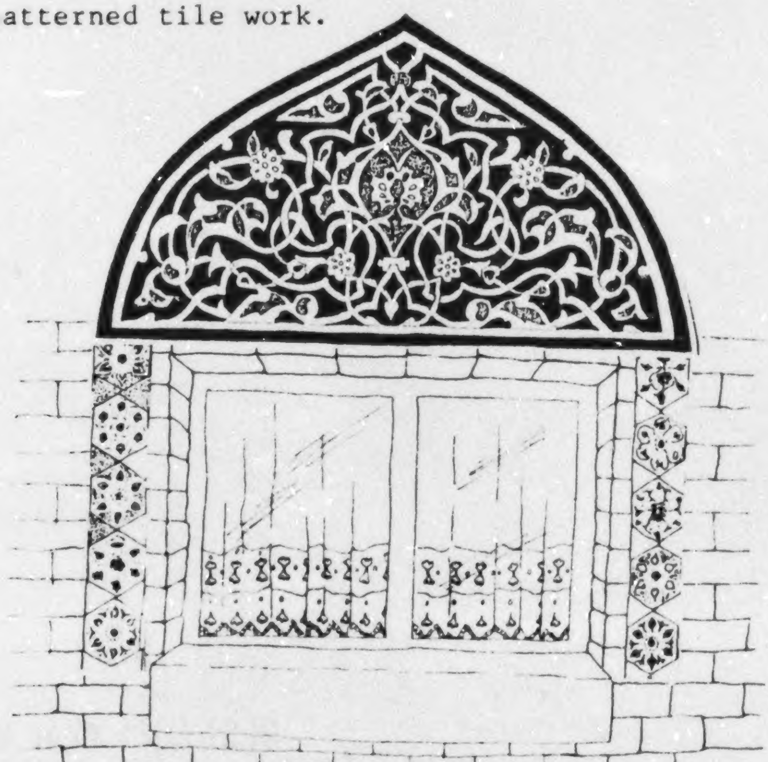
* Although patterns using just line can be very complicated the use of colour brings out the greatest visual effect in Islamic pattern.

Tile making projects can be used to create a critical attitude towards the environment, particularly towards inner city areas. Exercises can be devised to raise questions concerning the aesthetics of concrete and brick and an alternative approach can be experienced in the practical study of Islamic tile work.

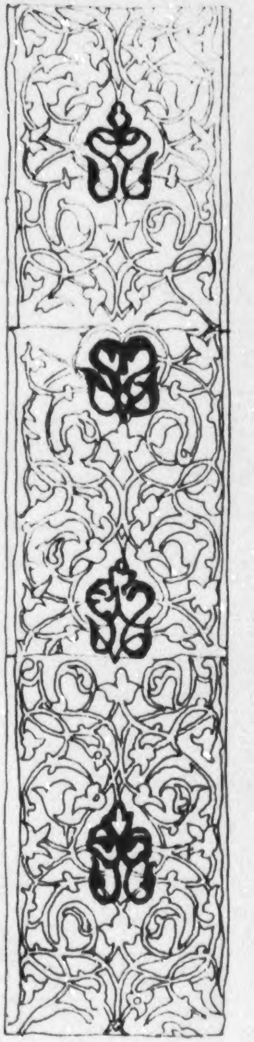
1. Draw or make large scale models of local buildings and decorate to simulate tiled pattern.

2. Large panels of tiles in card can be constructed to decorate wall areas in corridors and alcoves that are usually left bare.

3. Panels in clay are more expensive and usually have to be limited in size but,again, minature versions of large scale projects can be produced, e.g. a class could work together to produce a model of their school facade in patterned tile work.



WORKING IN CLAY



The best clay to use for tile-making is a mixture of 50% modelling clay with 50% crank clay. This will give a good texture to work with and will help prevent warping as the clay dries out.

Red earthenware or terracotta can also be used and, if mixed with grog will have additional strength when fired at low temperatures.

1. Always work on a flat surface, lay down plastic sheeting or hessian so that tiles can be lifted easily.

2. Be careful not to make tiles to thin for their surface area, most Islamic tiles at least ½" thick and some Turkish tiles are an inch thick to allow for them to be set into plaster walls.

3. Work the clay by hand and use a roller to flatten out. Lay strips of wood around clay, these should be of the same thickness as needed for the tiles. Rollout clay in different directions and on both sides so that it is well bonded together.

4. Cut out tile shapes. If shapes are complicated use a template of stiff card. Lay this on clay and mark around edges with a knife Continue drawing around card, gradually increasing the depth of each cut.

5. Remove excess clay, lift tile carefully and release from sheeting.

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RELIEF TILES IN CLAY

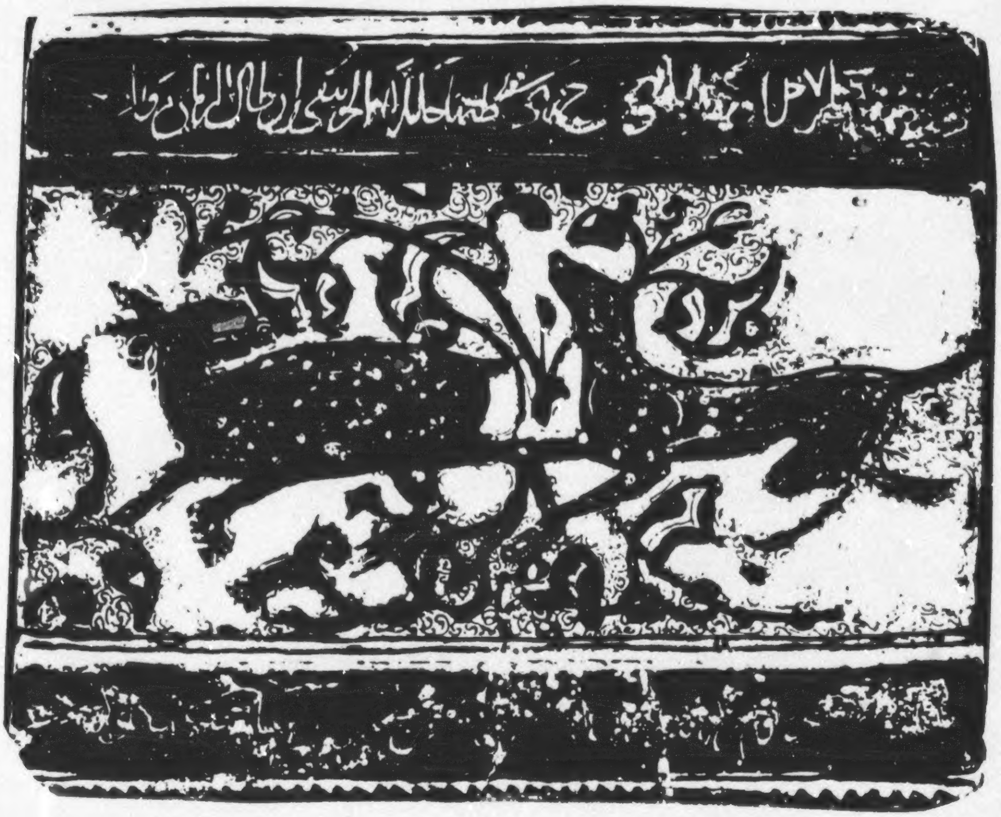
The surface of each tile should be worked while still damp.

1. Incised patterns can be made with modelling tools.

2. All sorts of objects can be pressed into the tile to build up patterns and textures.

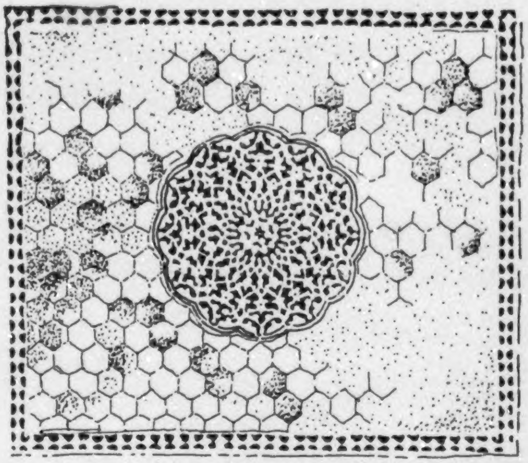
3. Clay pieces can be added to the clay surface. Attach firmly.

4. For identical tiles, make use of plaster mould or stamp clay with carved wooden or plaster block.



Lustre painted tile: carved in relief. 13th c. Kashan. showing deer running through foliage.

TILE MOSAIC



The original technique of making a mosaic from glazed ceramic tiles is extremely delicate and skilled.
The method given below has been devised to imitate both process and end result effectively.

TILE MOSAIC IN CLAY

This technique is close to the original except that the clay is cut to shape before glazing and firing. The finished result, however, is rougher and less accurate.

1. Draw out a design on thin card or thick paper. Do not make it too detailed as each part is to be cut out separately in clay. once the design is finished keep a copy for reference.

2. Transfer each separate part of the design onto a piece of rolled out clay.

   a) cut the drawn design into its individual parts and use them as templates

   b) Lay the drawing out on the clay and prick the lines of the design with a compass point.

3. Fire and glaze tile pieces.

* It is important with both card and clay to know which side is to be coloured. Mark the reverse of each piece for easy assembly

ASSEMBLING THE MOSAIC

Either:

1. Lay the pieces coloured side down onto the copy of the original drawing, build up clay walls around the mosaic and pour in thick plaster. Strengthen the back with strips of wood or scrim.

   When dry the mosaic can be turned over and any unwanted drips of plaster scraped away.

2. Lay the pieces coloured side up in wet plaster using the drawings for reference. If the design is large, divide it into sections to avoid plaster setting before the mosaic has been completed.

3. Simply fix the mosaic pieces to a sheet of rigid card or plywood with glue.

OTHER MATERIALS FOR MAKING TILES

1. PLASTER

Plaster can be strengthened by adding P.V.A. glue or by laying a fine scrim cloth down in the base of the mould before adding plaster.

Plaster tiles can be cast in moulds or plaster can be poured onto a large sheet of plastic and scored and cut when set and dry.

1. Patterns can be built up in the still wet plaster by embedding objects or impressing them on the surface.
2. If the tiles are thick enough they can be carved into.
3. Tiles can be painted and designs scratched into them so that the white shows through.

2. CARD

Using thick card cut out tile shapes:

1. Colour in patterns with paint, crayon, coloured pens.
2. Build up patterns with layers of card.
3. Glue string, beads, thread or material onto surface.

A TILED PICTURE.

In a tiled picture the design extends across the whole area of tiles with each section bearing a part of the image. Usually the tiles are large and rectangular, but any regular grid pattern could be used.

Good examples of Islamic tile pictures can be seen in the Ottoman period when the Isnik potteries turned out large numbers of panels for mosques and palaces between the 15th - 18th centuries. Also in Persia from the 17th century tile pictures were made for palaces that showed members of the court strolling, dancing and picniking in garden settings.

Making a tile-picture is a good way to involve a group in cooperative discussion and decision-making.

A Paradise Garden.

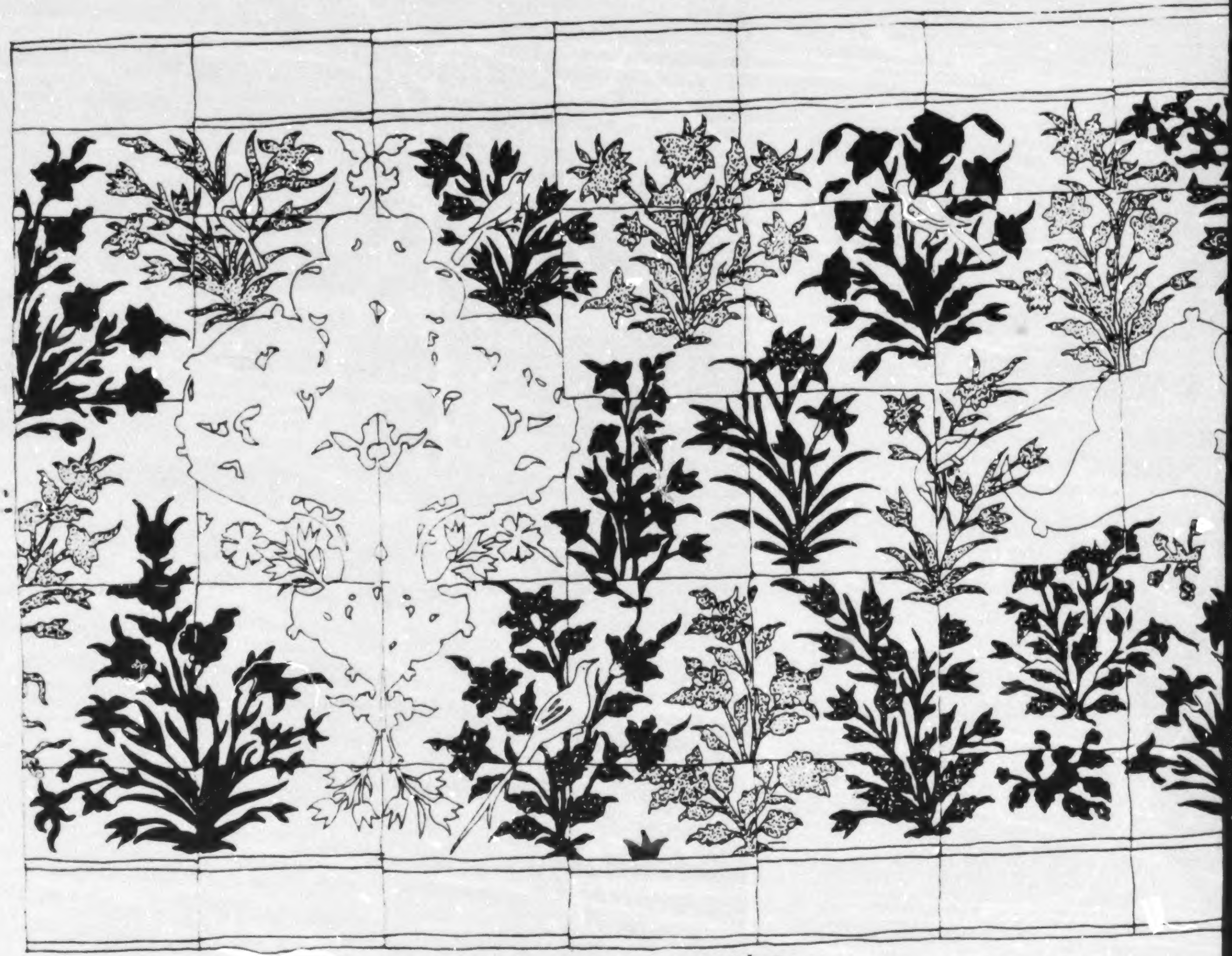
1. Start with a large sheet of paper divided into regular sections- rectangular is easiest.

2. Discuss what is to be drawn- what trees,flowers, birds and animals. Each person can then draw one element wherever they want on the grid.

3. When every section has been sufficiently filled, cut the paper into its sections and distribute at random to colour in.
REMEMBER TO NUMBER EACH SECTION BEFORE IT IS CUT UP SO THAT IT CAN BE REASSEMBLED.!!

4, The colouring can be entirely up to the individual or to a prearranged pattern.

5. When reassembled a discussion can follow as to how the picture can be modified.



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A panel of painted tiles from Isfahan, mid 17th century. 4ft. high approximately.

It has not been within the scope of this book to provide a proper introduction to loom weaving, but technical guides are available on the subject. The following concepts and projects may be explored in relation to the section of this book on Islamic woven pattern: they stress the relation of the individual to the group, and the use of pattern in different media — social and visual concepts crucial to Islam.

	CONCEPT	PROJECT	PAGE NUMBER
①	part/whole stable/dynamic complete/endless	visual exploration of these values	2
②	the written text as an object for decoration	decorate a page of text with patterned borders make a patterned cover for a special book	3/4
③	translation of 3-D form into 2-D design	use a window, n stairway, a tower or other architectural feature as th- basis for a 2-D design	6
④	the individual and the group: pattern embodying the concept of unity	using the same basic design, individuals make separate patterns which are then joined together: they may or may not consult	8 + 28 + 35
⑤	light and shadow changing pattern	patterns are fixed on an architectural surface and in recess so that they are seen to be effected by times of day	8
⑥	structure and pattern in basic basketweave	simple warp and weft weaving with strips of paper, card, or other material which shows how making a structure creates a pattern which may be developed as with the Greek Key design.	9 + 42
⑦	the family tree as an image of the group	the individual makes a tree pattern which is also an image/record of his/her own family or class group	12
⑧	the gül as sign of group identity	individuals collaborate in designing pattern motifs which are emblems of the group, or individuals exchange designs	12 + 53
⑨	the wall mural as celebration of an important event	using cut-out stencils of particular objects associated with an event, the group decorate a wall	13-15
⑩	the power of the hand	discussion of the Khamsa and the Five Pillars of Islam work with handprints and hand stencils	16
⑪	the doorway, the gate and the window as forms which may be decorated	decoration around and on an actual door with stencils and cut-out motifs	17

⑫	hooked and radiating motifs	the sunburst, tortoise and tarantula medallions as the basis for designs	18 + 29 + 47
⑬	decoration of the self	the human body decorated with make-up and temporary tattoos	18
⑭	physical actions as pattern in time and space	learned actions are performed together by the group in a time sequence in an ordered space	19
⑮	camel caravan/ fish in stream: animal motifs in series	the motif of an animal is repeated in sequence so as to express the idea of progress through space	23 + 59
⑯	the dividing curtain: separation of the group	the class make a patterned dividing curtain for a space: the group is divided in two, each decorating one side of the curtain	27-29
⑰	a pattern made of light	the group makes a lattice screen which lets through light: this is placed in darkness and a torch shone through to create a pattern of light on the floor.	31-32
⑱	the tent: inside and outside	the group constructs a simple canopy which provides shade: wall's may be added to enclose the space: here they offer hospitality	24+ 33
⑲	patterned decoration of an artifact	a bag is decorated with tassels, güls, etc.	34+22
⑳	partition of the circle	patterns are made, based upon wheels, stars, spirals, etc, which emphasise the centre and circumference of the circle	36
㉑	the deliberate mistake	regular patterns are made in which each individual attempts to conceal a deliberate mistake as a sign of humility	40
㉒	endless pattern	each individual makes a pattern of horizontal stripes: all the patterns of the group are laid out in a long line: the group walks the length of the total pattern	35
㉓	horizontal/vertical/ diagonal axes as the bases of design	exploration of these visual principles, on their own and together	37

㉔	pattern generation	stepping patterns created with mat weaving, zig-zag lattices made with coloured 'tile' squares, and point-to-point pin and string patterning	38
(25	Knotting	a basic introduction to knotting	39
(26	memory patterns	the group makes copies of established carpet designs which each individual has attempted to memorise like tribal weavers : afterwards they compare their work with the originals	42-44 +48
㉗	colour and meaning	colours are used according to their associations for the individual and the group	45-46
㉘	animals never seen	pattern motifs are made of animals which the individual has heard of, and seen pictures of, but never encountered	51
㉙	a story in pattern	a folk story is read : the individual makes quick simple drawings of the essential characters and objects and places while the story is told : these become the stylized motifs of the picture	51
㉚	unbroken line	a pattern is made with a single line : the individual does not lift the pen from the paper	52
㉛	system and scatter	linked motifs in systematic arrangement with improvised, chance scatters of motifs	53
㉜	rose stem/ fish scales : pattern in natural form	the arabesque curves of a branching flower stem and the layered scales of a fish as the basis for pattern design	54 + 58
㉝	catching happiness : symbolism of a design	the image of the phoenix in Isfahan carpets is considered.	54
㉞	symmetry	coloured papers are folded and cut-out designs made : these are stuck to coloured grounds of different shapes and fitted together in a carpet plan	57
㉟	positive and negative	cut-out stencils are used to print with (positive) or sprayed around and through (negative) or both together to create patterns	58
(36	the Paradise Garden	a carpet cartoon is made by the group which makes an aerial view/ plan of a great garden with a stream and paths as in page 59 : this is walked upon and individuals sit in the garden they have made – The poem overpage is read.	59

'Ode to a Garden Carpet' by an unknown Sufi poet.

Here sense and reason in concord blend,
In harmony and proportion, in unity transcendent
The mind of God revealing,
By our tangled errors so darkly hidden;
The goal of all desire,
The opener of all doors,
The answer to all questions,
The reason of all reasons.
From snares of self set free,
In august and tranquil beauty
The Beloved's Face at last we see,
And there attain our journey's end,
Our life's reward and final Destiny—
Refuge and fulfillment in His Infinity.

Here in this carpet lives an ever-lovely spring;
Unscorched by summer's ardent flame,
Safe too from autumn's boisterous gales,
'Tis gaily blooming still.

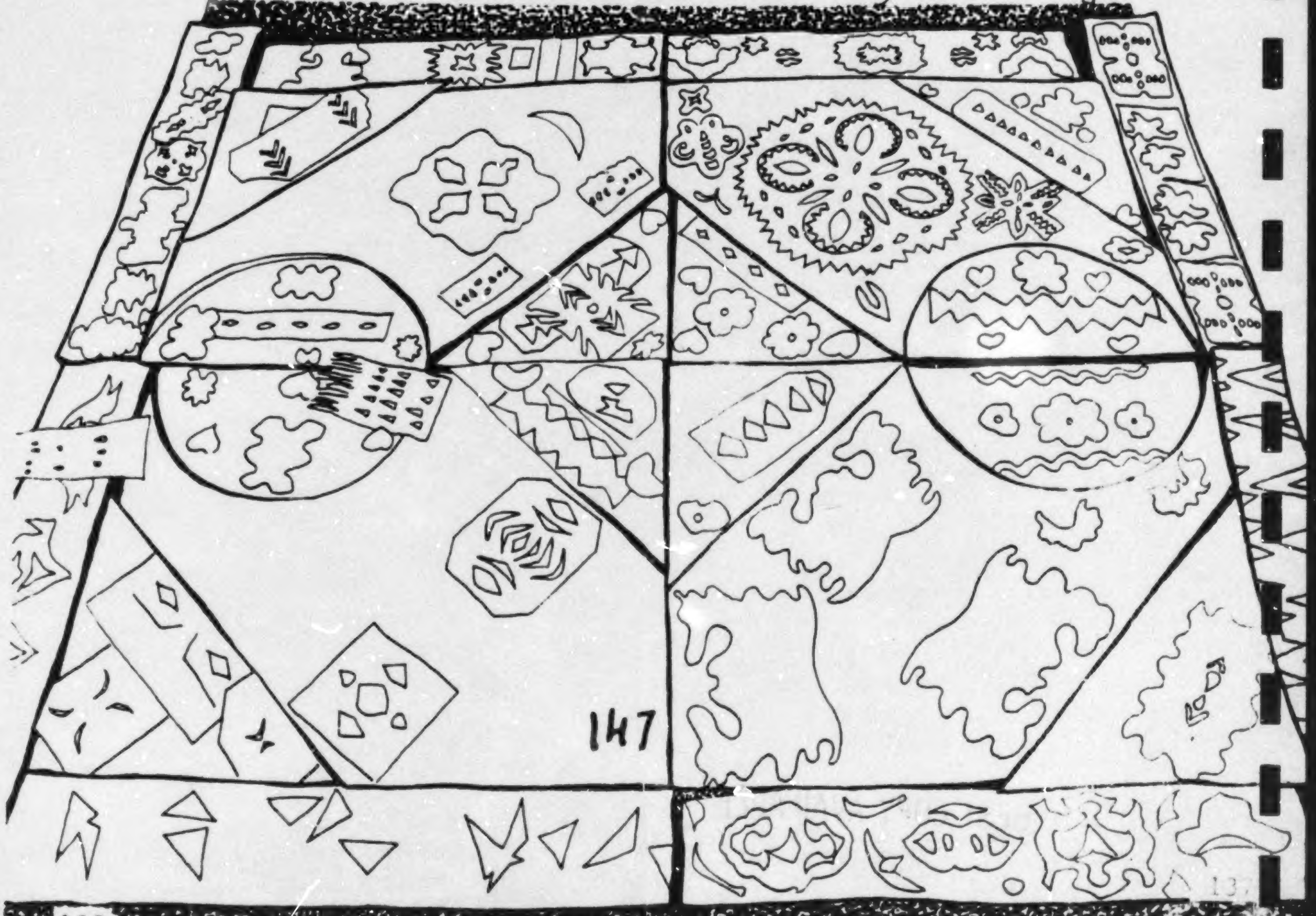
The handsome wide border is the garden wall
Protecting, preserving the Park within
For refuge and renewal; a magic space
For concourse, music and rejoicing,
For contemplation's lonely spell—
Conversations grave, or lover's shy disclosure.

Eyes hot-seared by desert glare find healing
In its velvet shade. Splashing fountains and rippling pools
In cool retreats sore-wearied limbs restore
And tired hearts awake with joy once more.
The way was cruel,
Baffled by monotony and mocked by phantoms delirious,
Beset by stalking Death in guises manifold;
The dreaded jinns, the beasts ferocious,
The flaming heat and the exploding storms;

From all these perils here at last set free;
In the Garden all find security.

Beneath a silver sheen, like morning dew
Glow lambent fires translucent.
Here tremulous buds break into foaming flowers
And swirling vines with perfect grace
Their target find in a gem-like lotus.
The central medallion is the all-powerful sun,
A golden lion the skies commanding.
Its life-giving Power flows down through the Cosmic Axis
And all creation stirs in vibrant glow,
Each quivering bud and starlike flower
In serene felicity to their Lord responding.

A carpet plan made by schoolchildren with cut-out coloured paper
glued on card: the separate cards fit together and may be arranged in different ways.



MADRASSAH	from the Turkish 'medresse' : religious and educational establishment usually attached to a mosque
MIHRAB	niche in the mosque showing the direction of the Kaaba in Mecca
MINBAR	pulpit from which the imam leads the prayers in a mosque
MIR-I-BOTEH	an important pattern motif with many symbolic interpretations
MUDHIF	reed house of the Marsh Arabs of Iraq
MUEZZIN	the person appointed to call the Faithful to prayer
MUQARNA	multifaceted stalactite vaulting seen on the interior of arched doorways and ceilings
QARAYSH	the tribe which controlled Mecca in Mohammed's time
RAKAH	the 'bowing down' ritual at the Prayer of Assembly
RAMADAN	period of fasting (one of the Five Pillars)
RUMT	indigenous Turkish floral arabesques
SALAT	Daily Prayers of Moslem people (one of the Five Pillars)
SALIM	caller of knots in carpet workshop
SAPH	type of group prayer carpet
SAVONNERIE	Western floral carpet designs
SENNEH	kind of knot
SHAHABAD	the Recitation of the Creed of Islam (one of the Five Pillars)
SUFIS	Moslem mystical sect
THOB'OB	a traditional dress of Bedouin women
UMRA	ritual kissing of the Black Stone and circling of the Kaaba : attached to the Hajj
YURT	dome-shaped felt tent
ZAKAT	almsgiving (one of the Five Pillars)

GLOSSARY

ABAGAH	large sleeveless Bedouin cloak
BAYT AL-SHA'AR	'house of hair',Bedouin tent
CHAHAR BAGH	the formal 'Four Gardens' of Isfahan
CHAIKHALTA	embroidered bag for carrying tea made by the Afghan Kirghiz tribe
CHAQMAQ	firelighter of the Kirghiz tribe
CUERDA SECA	'dry cord',term used in Spain for polychrome glazes,colours separated by lines of manganese
GÜL	a tribal emblem and protective charm
GUNBAD	Seljuk tomb tower
HADITH	the sayings of the Prophet Mohammed
HAFT-RANGI	'seven-colour' technique,polychrome fired as with cuerda seca
HAJJ	the Pilgrimage to Mecca (one of the Five Pillars)
HATAYI	decorative motifs derived from Persian and Chinese sources
HOAMA	Tree of Life
IHRAM	white garb worn by pilgrims on the Hajj approaching Mecca : symbolic of the holy state of pilgrimage
IMAM	leader of prayer in the mosque
IWAN	monumental gateway used in Persian architecture
KAABA	sacred shrine at Mecca
KAR-HANEH	carpet workshop
KELIM	flat-woven tapestry-like kelim
KHAMSA	hand with open palm : symbol of of the Five Pillars of Islam
KIBLA	wall in the mosque which faces the Kaaba in Mecca
KISWA	the embroidered cover of the Kaaba
KORAN	the Holy Book of Islam
KUFIC	calligraphic script emphasising horizontal and vertical strokes : named after the town Al-Kufa
KURK	finest grade of wool from young lambs
LIBAD	camel litter decoration

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